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ANNALS OF THE CAPE OBSERVATORY, VOL. IX.

REVISION

OF THE

CAPE PHOTOGRAPHIC DURCHMUSTERUNG,

PARTS I., II., AND III.

MADE UNDER THE DIRECTION OF

SIR DAVID GILL, K.C.B., LL.D., F.R.S., ETC.,

HIS MAJESTY'S ASTRONOMER.

PUBLISHED BY ORDER OF THE LORDS COMMISSIONERS OF THE ADMIRALTY
IN OBEDIENCE TO HIS MAJESTY'S COMMAND.

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REVISION OF THE CAPE PHOTOGRAPHIC DURCHMUSTERUNG.

It is intended that the volume shall ultimately contain the following parts :—

Part I. Examination of questions which have arisen from a comparison of other star catalogues with the C.P.D.

,, II. Observations of Variable Stars.

,, III. Errata in Southern Star Catalogues.

,, IV. Discussion of Proper Motions suspected by Professor Kapteyn.

,, V. Revision of the magnitudes of the C.P.D.

Parts I., II., and III. are now published without the Introduction, Index, etc., which will be issued when the remaining parts of the volume have been completed.

DAVID GILL,
H.M. Astronomer.

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ANNALS OF THE CAPE OBSERVATORY, VOL. IX.

REVISION

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CAPE PHOTOGRAPHIC DURCHMUSTERUNG,

PART I.

RESULTS OF EXAMINATION OF QUESTIONS WHICH HAVE ARISEN FROM A COMPARISON OF OTHER STAR-CATALOGUES WITH THE CAPE PHOTOGRAPHIC DURCHMUSTERUNG.

BY

R. T. A. INNES,

SECRETARY, AT THE ROYAL OBSERVATORY, CAPE OF GOOD HOPE.

Wt. 21282.—N.—500. 1902.

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CAPE PHOTOGRAPHIC DURCHMUSTERUNG REVISION.

PREFACE.

In the Introduction to the 3rd Volume of the Cape Photographic Durchmusterung (*Cape Annals*, vol. v. pp. 9–14), Sir David Gill refers to the lists of stars which were forwarded to the Cape Observatory from time to time by Professor J. C. Kapteyn of Groningen for the purpose of visual examination of the origin of discrepancies between the C.P.D. and other catalogues, and he gives a condensed summary of the results attained.

Details of the observations on which this summary was founded, and of more recent observations, are given in the following pages.

Previously to my arrival at the Cape, Mr. W. H. Finlay had begun this revision. The observations made by him are marked (F). On my arrival in 1896 I was offered and gladly took up this most congenial task.

It will be seen by looking at Kapteyn's original lists in the introductions to the three volumes of the C.P.D. that the queries were of many sorts. After a few nights' work, I found that the most satisfactory method of dealing with them was to make a map of the region around each queried star-place. This was accordingly done in upwards of 1200 cases. These maps measured 8 × 6 inches, and covered about 40′ of arc in R.A. and 30′ in Dec. The paper used was already ruled in squares which were adopted as equal to 1′. The maps accompanying the observations of variable stars, in Part II. of this volume, are on the scale used.

The method of filling in the surrounding stars varied with the catalogues available; in general, the C.P.D. was adopted as the basis; then, if the region fell within the limits of Schönfeld's B.D. or Thome's Cor. D.M., extra stars from these authorities were added. The queried object was marked on its map by a ring, but no hint as to the nature of the query was given; and if the place was examined on more than one occasion, the results of previous observations were not referred to at the time, so that every observation is entirely independent. This rule was broken in the few cases where the results were discordant—such cases can be picked out by reference to the printed observations, which are given practically as entered in the observer's note-book.

The telescope used throughout was the 7-inch Merz. equatorial. An eyepiece giving a field of about 35′ was used, except in the beginning of the work when the Repsold micrometer was on the telescope; I had then to use a smaller field, which made observation more difficult. The micrometer was again put on for very short periods whilst comets

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were being observed, but later, a weight equal to the extra weight of the micrometer was added to the tube of the negative eyepiece, so that to change the eye-end of the telescope is only the matter of a few minutes.

In the regions covered by the B.D. and the Cor. D.M. the scale of magnitudes is based on those authorities. South of $-42°$ Declination (for which at that time no visual Durchmusterung was available) I had to a considerable extent to rely on my own judgment. Also, when it seemed advisable to do so, I re-estimated the magnitudes on some of the maps, as it is seldom that the magnitudes from the B.D. or the Cor. D.M. are quite homogeneous over the region covered by a map. Comparisons between the magnitudes used on the variable star maps in Part II. of this volume and the corresponding Durchmusterungs will serve as examples of the changes thus introduced.

It was hoped in projecting the C.P.D. that at least every star, not fainter than 9·0 magnitude and not deeply coloured, would be included. If we adopt the 9th magnitude of Gould or Argelander—but not that of the Cor. D.M. which is considerably fainter—I do not consider that a single uncoloured star of that magnitude has escaped. I still feel confident that in the few cases where the absence of stars reputed to be of 9·0 magnitude or brighter is not yet accounted for by the revision, some cause for such will yet be found in the star—perhaps colour or long period variability or some other at present unknown reason, but in many cases it is because the star's magnitude has been erroneously estimated and it is really fainter than 9·0 magnitude. It may be remarked that every star estimated 9·0 magnitude or brighter by Gould, which is not deeply coloured nor suffers from error, is in the C.P.D. with exception of the stars No. 28,* 114, 213, and 294 of List I. These four stars are really fainter than 9·0 magnitude. The *Southern Meridian Photometry* shows that in all parts of the heavens not a few of Gould's $9{\cdot}0^{m}$ stars are really only of the 9·7 magnitude.

But although it happens that this revision has in every case traced the reason for the absence in the C.P.D. of each and every star estimated by Gould to be the 9th magnitude or brighter, yet that the explanation is complete must be, to a great extent, a matter of chance. Take, for example, the case of the remarkable star C.Z. 15^{h} 3719 (List I. No. 132) which for long periods of time is practically invariable at magnitude 9·1 or 9·2, yet, occasionally and for very short periods at a time, becomes fainter than $10\frac{1}{2}$ magnitude. Such a star may, in a revision like the present, be examined fifty times without betraying any certain change of magnitude, and yet both of the C.P.D. plates which ought to have contained the star appear to have been taken when the star was fainter than 10th magnitude, and in consequence it does not appear in the C.P.D. It was only by persistently repeated observation, based on the certainty that the star must be variable, that proof of its variability was found. But when we reach the magnitude about which it is doubtful whether the C.P.D. is complete or not, the examination of evidence becomes more difficult, but at the same time more likely to lead to the discovery of variable stars.

Take, again, the star of List I. No. 196. Gould estimated it $9\frac{1}{2}$ magnitude; it figures as 9·7 magnitude in the Cordoba D.M., and on 1895 Nov. 8, Finlay at the Cape

* No. 28. Since found to be variable.

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estimated it = Schönfeld D.M. 5468 = 9·7 magnitude. Apparently from these observations it might be assumed that the star is not a variable, and that it was really wanting in the C.P.D. because it is fainter than the limit within which the C.P.D. is assumed to be complete. But examinations showed that many stars estimated 9·9 magnitude by Schönfeld and Thome and some of 10th magnitude were contained on the plate, so that on the dates when the C.P.D. plates were taken, the star must have been taken photographically fainter than 9·9 magnitude. In the Munich Catalogues the star appears as follows:—1846.6, 8th magnitude; 1884.6, 10th magnitude; 1885.6, 9th magnitude. Frequent observations at the Cape during 1900 and 1901 have proved the star to be variable from 9·1 to fainter than 12·0 magnitude.

From such examples, illustrating as they do the difficulty of pronouncing definitively whether a particular star is variable or not it must be evident that not a few of the stars which are not in the C.P.D., but which I have certainly seen in the sky brighter than a good many stars which are shown on the same C.P.D. plates, will yet prove to be variable—or their absence from the C.P.D. be explained by some peculiarity of their spectra. Examples of such cases are the stars Nos. 2, 6, 11, 24, etc., of List I., of which the absence from the C.P.D. is not yet satisfactorily accounted for; such cases will be examined again and again as opportunity offers.

Stars of the Cordoba Zone Catalogue marked with a query present an interesting field for research. The greater number of these can no longer be found, but several have turned out to be variable stars, in a few cases they represented observations of minor planets, but there is no explanation for the disappearance of the greater number of them. It would be unreasonable to put all of these down to errors; for Gould was a most accurate observer. It was my confidence in his accuracy that led me to re-examine several cases with increased care, which thus lead to the discovery of one or two new variable stars. It is tolerably certain that some of the queried stars will yet be found to be long period variables with a brief period of visibility during which they are brighter than 9·5 magnitude like 1850 S Pictoris.

The stars missing in the 3rd Volume of the C.P.D. comprise those from No. 309 to No. 983. The majority of these were furnished by Gilliss's Southern Circumpolar Catalogue. A considerable number of these stars could not be found with the 7-inch, and a list of them was sent to the Superintendent of the U. S. Naval Observatory, Washington (where Gilliss's records are kept). The reply kindly furnished shows that most of these discrepancies are due to misprints or errors which admit of the corrections now made (see Errata in Star Catalogues). In every case the sense of the explanation received from Washington has been inserted, but it must be distinctly understood that the wording has been changed so as to suit the arrangement of the C.P.D. An example will show what has been usually done:—

List I. Star No. 314. Washington gives the corrected place of this star for 1850 as $0^h\ 11^m\ 2^s{\cdot}03\ -69°\ 22'\ 44''{\cdot}3$. This being exactly 20′ different from the catalogued declination we have put: "Washington:—14′ in place of 34′"; as precession in 25 years has changed the star's declination from −69° 22′ to −69° 14′.

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As to the colour of the stars—at first this was recorded in words, but later a numerical scale was used. It is hoped that the scale adopted will not be found to differ widely from that of Dr. Chandler (*Astronomical Journal* No. 300, 1893 Aug. 2).

The scale used here is about as follows:—

Colour	Number	Colour	Number
White	0	Orange Red	6
Yellowish	1	Reddish	7
Yellow	2	Red	8
Deep Yellow	3	Very Red	9
Orange Yellow	4	Deepest Red	10 (used once)
Orange	5		

The observations of stars proved to be variable are for convenience transferred to Part II. of this volume.

In the results of revision, the words "in approximate position" or their equivalent are frequently used. In such cases a margin of about 1′ is claimed. The region in these cases is such, that if the star is looked for with a transit-circle, no doubt need arise in the astronomer's mind as to which of several stars he should observe, as the star in the "approximate position" will be the only one visible within 1′ of the position.

1902 *July 16th.*

P.S.—Advance sheets of List I. were sent to Dr Ristenpart, who, in return, contributed the very valuable notes contained in an Addendum:—See p. 61A.

Errata. List I., No. 253. *For* τ, *read* T.
„ I., „ 302. Number the succeeding star 303, *not* 313.

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CAPE PHOTOGRAPHIC DURCHMUSTERUNG:

RESULTS OF REVISION.

LIST I.

STARS CONTAINED IN CATALOGUES OF PRECISION, AND MISSING ON THE C.P.D. PLATES.

No. 1. Z.C. 94. $0^h\ 3^m\ 22^s$ $-25°\ 13'·3$ M. 9·5

Marked with a ? in Z.C. (1 obs.).
Cape :—1896, Aug. 1. No star seen.
Not in Cor. D.M.

No. 2. *a* 52. $0^h\ 7^m\ 6^s$ $-19°\ 8'·1$ M. 9·5

Also in *b* ; and in B.D. = 9·3 mag.
Kapteyn :—Missing in four sweeps on two pairs of plates. Looked up on plates $21\frac{1}{2}°$, $0^h\ 0^m$, where, at best, extremely faint and uncertain traces of a star can be detected.
Cape :—1896, Aug. 1. Seen, 9·5 mag., no pronounced colour.

No. 3. G. 199. $0^h\ 11^m\ 28^s$ $-20°\ 50'·6$ M. $10\frac{1}{4}$

Also in B.D. = 9·5 mag.
Kapteyn :—Looked for on plates ; at best, extremely faint and uncertain traces of a star can be found.
Cape :—1896, Aug. 1, 9·8 mag.
,, Sept. 7, 9·9 ,, very red.
,, ,, 23, 9·9 ,,
,, ,, 27, 9·9 ,,
,, Oct. 6, 9·9 ,,
,, ,, 20, 9·9 ,,
,, ,, 26, 9·7 ,,
,, Nov. 19, 9·8 ,,

No. 4. Z.C. 677. $0^h\ 25^m\ 44^s$ $-29°\ 27'·3$ M. 9·5

Marked with a ? in Z.C. (1 obs.).
Cape :—1896, Aug. 1. Not seen.
Not in Cor. D.M.

No. 5. Z.C. 799. $0^h\ 30^m\ 17^s$ $-27°\ 30'·5$ M. 10·0

Kapteyn :—Cor. D.M. has a star 9·5 mag., $30^m\ 17^s$ $-27°\ 32'·0$. In the original observations of our D.M., a single observation occurs of a star 9·9 mag., $30^m\ 19^s·2$ $-27°\ 32'·1$. Does position in Cor. D.M. refer to the star of Z.C. or to that of the plates ?
Cape :—1896, Aug. 1. C.P.D. position, 19^s and 32′, is correct. No other star near there.
See Errata in Z.C.

No. 6. Z.C. 1151. $0^h\ 43^m\ 51^s$ $-28°\ 22'·7$ M. 10·0

Also in Cor. D.M. = 9·3 mag.
Kapteyn :—Certainly missing.
Cape :—1896, Aug. 1. 9·2 mag.

No. 7. Z.C. 564. $1^h\ 22^m\ 4^s$ $-33°\ 10'·5$ M. $9\frac{1}{2}$

One observation in Z.C.
Kapteyn :—Missing in four sweeps on plates $31\frac{1}{2}°$, $1^h\ 12^m$, and $31\frac{1}{2}°$, $1^h\ 36^m$. Certainly missing on plates $35\frac{1}{2}°$, $1^h\ 15^m\ 47^s$. 10 sec. in error in R.A. ?
Cape : — 1896, July 31. Not seen. There is a 9·6 mag. star about 11 sec. *pr.* a little S. = Cor. D.M. —33°,527.
See Errata in Z.C.

No. 8. K. $1^h\ 36^m\ 41^s$ $-20°\ 20'·2$ M. $11\frac{1}{2}$

Also in B.D. = 10 mag.
Cape : — 1896, Aug. 1. Seen, 10th mag. ; many brighter stars within a degree.

No. 9. K. $1^h\ 42^m\ 26^s$ $-19°\ 43'·2$ M. 12

Cape :—1896, Aug. 1. Seen, 12th mag. ; dark field.

No. 10. Z.C. 1124. $1^h\ 43^m\ 32^s$ $-26°\ 38'·1$ M. 10

Also in Cor. D.M. = 9·6 mag.
One observation in Z.C.
Cape :—1896, July 31. Seen, 9·8 mag.
See also Errata in Z.C.

No. 11. K. $1^h\ 43^m\ 42^s$ $-20°\ 16'·0$ M. 9

Also in B.D. = 9·3 mag.
Kapteyn :—Certainly missing.
Cape :—1896, July 31. Seen, 9·3 mag., the brightest of an isolated group of three. No striking colour.

No. 12. K. $1^h\ 44^m\ 57^s$ $-19°\ 14'·9$ M. $11\frac{1}{2}$

Cape :—1896, July 31. Seen, 11th mag.

No. 13. K. $1^h\ 45^m\ 17^s$ $-19°\ 21'·2$ M. 10

Also in B.D. = 9·7 mag.
Kapteyn :—Certainly missing.
Cape :—1896, July 31. Seen, 9·9 mag.

No. 14. K. $1^h\ 45^m\ 18^s$ $-19°\ 20'·4$ M. $10\frac{1}{2}$

Also in B.D. = 9·7 mag.
Kapteyn :—Certainly missing.
Cape :—1896, July 31. Seen, 9·9 mag.

No. 15. Z.C. 1544. $1^h\ 57^m\ 46^s$ $-28°\ 51'·8$ M. 10

Marked with a ? in Z.C. (1 obs.).
Kapteyn :—Missing in four sweeps.
Cape :—1896, July 31. Not seen.
Not in Cor. D.M.

No. 16. Z.C. 71. $2^h\ 2^m\ 28^s$ $-31°\ 32'·4$ M. 10

Marked with a ? in Z.C. (1 obs.).
Cape :—1896, Aug. 1. Not seen.
Not in Cor. D.M.

No. 17. Z.C. 116. $2^h\ 4^m\ 6^s$ $-24°\ 59'·9$ M. $9\frac{1}{2}$

Marked with a ? in Z.C. (1 obs.).
Kapteyn :—Certainly missing.
Cape :—1896, Aug. 1. Not seen.
Not in Cor. D.M.
Looked for and not found at Arequipa. See *Harvard Southern Photometry*, No. 405.

No. 18. G. 2179. $2^h\ 4^m\ 26^s$ $-32°\ 1'·3$ M. $10\frac{1}{2}$

Also in Cor. D.M. = 9·6 mag.
Kapteyn :—Missing in four sweeps.
Cape :—1896, Aug. 1. Seen, 9·6 mag.

No. 19. G. 2550. $2^h\ 22^m\ 2^s$ $-32°\ 7'·7$ M. $10\frac{1}{4}$

Also in Z.C. = 10 mag., and Cor. D.M. = 9·7 mag.
Cape :—1895, Nov. 21. $9\frac{3}{4}$ mag. (F.)

No. 20. *b* II. 38. $2^h\ 23^m\ 51^s$ $-25°\ 40'·1$ M. 7·5

Kapteyn :—Identical with G. 2592 ?
Cape :—1896, Aug. 1. Not seen.
Not in Cor. D.M.

No. 21. Z.C. 858. $2^h\ 31^m\ 53^s$ $-27°\ 31'·3$ M. 9

One observation in Z.C.
Cape :—1896, Aug. 1. Seen, 11·8 mag.
,, Oct. 6. Invisible.
,, ,, 20. ,, full moon.
,, ,, 24. ,,
,, ,, 26. ,,
,, Nov. 4. ,,
,, Dec. 21. ,,

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Cape:—1897, Jan. 23. The Z.C. star does not exist. There is a 12th mag. star about 4′ N. of the position, which was doubtless the star seen last year, as no illumination of the field was possible at that time.
Not in Cor. D.M.

No. 22. Z.C. 1057. $2^h\ 38^m\ 23^s$ —28° 26′·4 M. 10
One observation in Z.C.
Also in Cor. D.M. = 9·7 mag.
Cape:—1896, Aug. 1. Seen, 9·9 mag. The double star β 261 is closely *n.pr.*, and another double is also *s.f.*

No. 23. Z.C. 1325. $2^h\ 48^m\ 24^s$ —26° 57′·7 9
Marked with a ? in Z.C.
Kapteyn:—Certainly missing.
Cape:—1895, Nov. 21. No star. (F.)
Not in Cor. D.M.

No. 24. G. 3302. $2^h\ 57^m\ 52^s$ —27° 13′·5 9½
Also in Cor. D.M. = 9·3 mag.
Kapteyn:—Certainly missing.
Cape:—1895, Nov. 21. 9½ mag., not red. (F.)

No. 25. Z.C. 113. $3^h\ 3^m\ 46^s$ —32° 40′·3 10
Marked with a ? in Z.C.
Cape:—1895, Nov. 19. No trace of a star. (F.)
Not in Cor. D.M.

No. 26. Z.C. 299. $3^h\ 9^m\ 44^s$ —30° 41′·9 10
Marked with a ? in Z.C.
Kapteyn:—It seems not improbable that the declination is 30′ in error, and that the star is identical with C.P.D. —31°, No. 378.
Cape:—1895, Nov. 19. No star in place. (F.)
Not in Cor. D.M.

No. 27. Z.C. 400. $3^h\ 13^m\ 5^s$ —36° 49′·5 10
Marked with a ? in Z.C.
Cape:—1895, Nov. 19. No star. (F.)
Not in Cor. D.M.

No. 28. Z.C. 721. $3^h\ 24^m\ 22^s$ —28° 50′·0 9
Also in Cor. D.M. = 9·2 mag.
Kapteyn:—Certainly missing.
Cape:—1895, Nov. 19. 9·5 mag. Same mag. as Cor. D.M.—28°, No. 1:65. (F.)
Two obs. in Z.C., mags. 8½ and 9½.
See Variable Stars.

No. 29. G. 3968. $3^h\ 31^m\ 18^s$ —24° 15′·6 10
Also in Cor. D.M. = 9·4 mag.
Kapteyn:—Certainly missing.
Cape:—1895, Nov. 19. 9·5 mag. (F.)

No. 30. G. 3976. $3^h\ 31^m\ 38^s$ —24° 15′·7 9½
Also in Cor. D.M. = 9·9 mag.
Kapteyn:—Certainly missing.
Cape:—1895, Nov. 19. 9·6 mag. (F.)

No. 31. Z.C. 1037. $3^h\ 34^m\ 32^s$ —25° 47′·3 9
Marked with a ? in Z.C.
Kapteyn:—Certainly missing.
Cape:—1895, Nov. 21. No star. (F.)
Not in Cor. D.M.

No. 32. Z.C. 1515. $3^h\ 49^m\ 35^s$ —26° 23′·1 M. 9½
Marked with a ? in Z.C.
Cape:—1895, Nov. 19. No star. (F.)
Not in Cor. D.M.

No. 33. Z.C. 1582. $3^h\ 51^m\ 43^s$ —27° 5′·6 10
Marked with a ? in Z.C.
Cape:—1895, Nov. 19. No star. (F.)
Not in Cor. D.M.

No. 34. *a* 2319. $4^h\ 0^m\ 52^s$ —23° 34′·7 9
Also in Wash. Z.; and in Cor. D.M. = 9·3 mag.
In D.M. of Orm. Stone = 9·4.
Kapteyn:—Certainly missing.
Cape:—1895, Nov. 19. 9·4 mag., not coloured. (F.)

No. 34*b*. Z.C. 601. $4^h\ 18^m\ 33^s$ —26° 13′·9 9·5
Marked with a ? in Z.C.
Not in Cor. D.M.

No. 35. Z.C. 806. $5^h\ 22^m\ 27^s$ —32° 32′·0 9½
Kapteyn:—In the original zones δ = 42′·0. In both positions the star is certainly missing on two pairs of plates. There is a single observation of a very faint star at δ = 52′·3, and a much brighter one at δ = 62′·3.
Cape:—1896, April 10. No star at —32° 32′ or —32° 42′, nor between those limits of Dec.
No star at 32′ or 42′ in Cor. D.M.
See Errata in Z.C. δ = 62′.

No. 36. Z.C. 1510. $5^h\ 40^m\ 21^s$ —25° 48′·1 10
Marked with a ? in Z.C.
Cape:—1896, April 10. No star.
Not in Cor. D.M.

No. 37. *b* V. 89. $5^h\ 41^m\ 19^s$ —26° 43′·6 7½
Cape:—1896, April 10. No star.
Not in Cor. D.M.

No. 38. Z.C. 155. $6^h\ 3^m\ 36^s$ —30° 51′·0 10
Marked with a ? in Z.C.
Cape:—1896, April 7. A 12th mag. star about $6^h\ 3^m\ 41^s$ —30° 50′.
" " 15. No star; a 12th mag. about 6 sec. following, and a little S. of the position.
Not in Cor. D.M.

No. 39. Z.C. 552. $6^h\ 12^m\ 12^s$ —31° 36′·0 9
Marked with a ? in Z.C.
Cape:—1896, April 7. No star in the place given.
Not in Cor. D.M.

No. 40. $6^h\ 18^m\ 40^s$ —27° 0′·1 ...
A.G.C. 7765. 8 mag., orange yellow (8 obs.).
Cor. D.M.—26°,2983. 8·6 mag., coloured.
C.Z.C. VI. 860. 9 mag. (1 obs.).
O.A. 5058. 7–8 mag. (1 obs.).
Kapteyn:—Certainly missing.
Cape:—1896, April 7. Mag. about 8·5, colour orange.
h:—"Very intense ruby coloured." 8 mag.

No. 41. g 307. $6^h\ 31^m\ 32^s$ —34° 52′·1 M. 7·5
(1 obs.)
Kapteyn:—Certainly missing on plates 35½°, $6^h\ 18^m\ 57^s$
Cape:—1896, April 7. No star here.

No. 42. Z.C. 1791. $6^h\ 37^m\ 50^s$ —31° 28′·2 9
This star was observed twice in the Z.C., and it is in Cor. D.M. = 9·0 mag.
Kapteyn:—Looked for on three plates. At best very uncertain traces on one or two of these.
Cape:—1896, April 7. Seen, 9·0 mag., orange coloured (without any red).

No. 43. $6^h\ 40^m\ 3^s$ —36° 53′·8 ...

	h m s	° ′ ″	M.
Z.C. VI. 1923 (corrected)	6 40 2·61	—36 56 43·8	10
Cor. D.M.—36°,3115	2·0	57 42	9·6
C.P.D.—36°,1045	0·8	58 6	9·6

Cape Meridian Observations:—

	h m s	° ′ ″
1897·2	6 40 1·41	—36 57 55·4
1901·1		—36 57 56·4

No. 44. Z.C. 2029. $6^h\ 41^m\ 50^s$ —29° 7′·1 9·2
Also in Cor. D.M. = 9·3 mag.
Kapteyn:—Certainly missing.
Cape—1896, April 15. Orange red star, 9·2 mag., in this position.
Two obs. in Z.C., mags 9½ and 9.

No. 45. G. 8534. $6^h\ 45^m\ 53^s$ —31° 18′·9 9½
Observed three times in G., and it is in Cor. D.M. = 9·4 mag.
Kapteyn:—Looked for on plates. At best, a very faint and uncertain trace on one of them. In Cor. D.M. reference G.C. omitted.
Cape:—1896, April 7. Seen, 9·6 mag., orange in colour as far as it is possible to say for so faint a star.

No. 46. Z.C. 2345. $6^h\ 47^m\ 3^s$ —26° 17′·6 9
Cape:—Two plates of this region were specially taken: Dec. 8, 1897, and Feb. 10, 1898, and neither show any star in position given. The plates and visual observations between April 6, 1896, and Nov. 24, 1897, show a star 11 to 12½ mag., but 1′ S. of the C.Z. position. (The range 11 to 12½ mag. is not beyond the errors of observation for so faint a star, and it is probably constant in magnitude.)
Error in α and δ, and the star = Z.C. 2355. See *Cordoba Observations*, vol. xii. p. 347.

No. 47. Z.C. 2740. $6^h\ 53^m\ 36^s$ —37° 35′·1 10
Also in Cor. D.M. = 9·6 mag.
Cape:—1896, April 15. A 9·9 mag. star in position given, too faint for colour.

No. 48. Z.C. 136. $7^h\ 1^m\ 57^s$ —34° 49′·5 10
Marked with a ? in Z.C.
Kapteyn:—Certainly missing.
Cape:—1896, April 15. No star; the nearest is Z.C. 133, about 9·0 mag.

No. 48*b*. Z.C. 408. $7^h\ 6^m\ 1^s$ —36° 52′·3 10
Dec. about 4′ in error. See Errata in Cor. D.M. Stars —36°,3391 and 3392. Is C.P.D. —36°,1157.

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No. 49. Z.C. 507. $7^h\ 7^m\ 22^s$ —32° 33′·2 M. 10

Also in Cor. D.M. = 9·7 mag.
Kapteyn:—On check plate perhaps a faint trace. On measuring plate certainly missing.
Cape:—1896, April 15. A star 9·4 mag. here, too faint for colour.
,, ,, 16. Seen.
,, ,, 29. Seen, 9·6 mag.

No. 50. G. 9512. $7^h\ 20^m\ 12^s$ —29° 15′·3 $10\frac{1}{2}$

Also in Cor. D.M. = 9·8 mag.
Kapteyn:—Certainly missing.
Cape:—1896, April 15. Seen, 9·8 mag. exactly; colour uncertain, being too faint.

No. 51. *t* 3166. $7^h\ 34^m\ 20^s$ —26° 31′·1 7

Kapteyn:—Identical with *t* 3157?
Cape:—1896, April 15. No star in position given. Assumed error unnoticed in Downing's revision.

No. 52. *l* 15,047. $7^h\ 36^m\ 32^s$ —21° 31′·5 $7\frac{1}{2}$

The star has been several times looked for in vain at Bonn. *Vid. Bonn. Beob.*, vol. vii. p. 203.
Cape:—1896, April 15. A scattered cluster here, but no star in position given.

No. 53. Z.C. 2812. $7^h\ 39^m\ 1^s$ —23° 32′·8 $9\frac{1}{2}$

Kapteyn:—In Messier 93. Certainly missing on plates. The declination is probably 2′ in error, and the star identical with C.P.D. —23°,2735. Cor. D.M. has $\delta = 32'{\cdot}5$, which agrees very well with Z.C.; but our declination 34′·6 is certainly correct.
Cape:—1896, April 15. Not in position given. The Dec. 34′·6 of C.P.D. is correct.

No. 54. *t* 3221. $7^h\ 40^m\ 2^s$ —37° 25′·3 $8\frac{1}{2}$

Kapteyn:—Certainly missing. It seems not improbable that the *a* is in error, and the star identical with G. 10,059.
Cape:—1896, April 15. No star.
Kapteyn's suggestion correct. See Downing's revision.

No. 55. G. 10,434. $7^h\ 51^m\ 0^s$ —22° 31′·5 9

Kapteyn:—Certainly missing.
Cape:—1896, April 15. No star here.
Error in C.G.A. No star A.N. 3539.

No. 56. Z.C. 3933. $7^h\ 52^m\ 42^s$ —24° 55′ 10

Also in Cor. D.M. = 10 mag.?
Kapteyn:—Cor. D.M. R.A. differs $5^s{\cdot}6$ from Z.C.
Cape:—1896, May 9. No star in positions of C.Z. or Cor. D.M.
,, ,, 14. No star in positions of C.Z. or Cor. D.M.
,, ,, 17. There is no star in the position queried. There are three stars near here, viz., $39^s{\cdot}5$ and 53′·7, $42^s{\cdot}0$ and 59′·3, and $44^s{\cdot}6$ and 59′·1, as in C.P.D. The positions of the stars in Cor. D.M. are here in several cases more than 1^s and 1′ in error.
,, Nov. 25 Above observations confirmed.

No. 57. G. 10,612. $7^h\ 56^m\ 45^s$ —27° 23′·6 10

Also in Cor. D.M. = 10 mag.
Cape:—1896, April 16. Seen, 10th mag.

No. 58. G. 10,623. $7^h\ 57^m\ 1^s$ —30° 52′·5 M. 9

Also in Cor. D.M. = 9·6 mag.
Kapteyn:—Looked for on plates. At best, very faint and uncertain traces of a star can be detected.
Cape:—1896, April 16. A 9·8 mag. star here.
,, ,, 30. Seen, 9·7 mag.

No. 59. Z.C. 4342. $7^h\ 57^m\ 5^s$ —34° 8′·3 9

Also in Cor. D.M.?
Kapteyn:—Certainly missing in this position. Identical with the star $2^s{\cdot}5$ preceding?
Cape:—1896, April 16. No star in position given.
,, ,, 30. Not seen. There are stars at approximately

h m s	° ′	mag.	
7 57 3·0	—34 8′·3	9·2	} as in Cor. D.M.
5·4	9·3	10	

Kapteyn's suggestion is correct. See *Cordoba Observations*, vol. xii. p. 347. Is same as Z.C. 4335.

No. 60. Z.C. 345. $8^h\ 4^m\ 30^s$ —35° 55′·1 $8\frac{1}{2}$

Also in Cor. D.M. = 9·3 mag.
Kapteyn:—Certainly missing.
Cape:—1896, April 16. Seen, 9·4 mag., very red.

No. 61. *a* 6587. $8^h\ 6^m\ 11^s$ —20° 50′·4 9

Also in B.D. = 9·4 mag.
Kapteyn:—Certainly missing.
Cape:—1896, April 16. A red star here, 9·3 mag.

No. 62. Z.C. 1151. $8^h\ 13^m\ 55^s$ —24° 16′·6 10

Also in Cor. D.M. = 9·6 mag.
Cape:—1896, April 18. Star seen, 9·7 mag.

No. 63. W. 3500. $8^h\ 23^m\ 45^s$ —29° 54′·0 8·9

The identification with Mural Zones 103, 21, given in W. is erroneous, this star being the same as W. 3510.
Cape:—Not looked for.

No. 64. Z.C. 2002. $8^h\ 23^m\ 54^s$ —30° 22′·1 $9\frac{1}{2}$

Also in Cor. D.M. = 9·5 mag.
Kapteyn:—Star is visible on check plate (mag. 10·1); invisible on measuring plate, or, at least, much fainter than 10·1. Variable?
Cape:—1896, April 18. Star seen, mag. 9·2.
1897, Feb. 28. ,, ,, ,, 9·55.

No. 65. Z.C. 2246. $8^h\ 26^m\ 48^s$ —28° 10′·7 $9\frac{3}{4}$

Also in Cor. D.M. = 10 mag.
Kapteyn:—Certainly missing.
Cape:—1896, April 18. Star seen, mag. 10·5, too faint for colour.

	mag.		mag.
1896, May 20,	9·8	1896 July 7,	9·7
,, ,, 26,	9·9	,, Nov. 19,	9·95
,, June 9, 10		,, Dec. 18,	9·9

See Errata in Z.C. Dec. = 27° 50′ and star = C.P.D.—27°,3273.

No. 66. *b* VIII. 84. $8^h\ 30^m\ 10^s$ —30° 28′·3 8·0

Cape:—No star. 1896, Apr. 18 and 30.

No. 67. Z.C. 2907. $8^h\ 35^m\ 7^s$ —30° 7′·5 10

Also in Cor. D.M. = 9·6 mag.

	mag.		mag.
Cape:—1896, Apr. 18,	10·1	1896, May 20,	10
,, ,, 30,	$10\frac{1}{2}$	,, ,, 26,	10

No. 68. G. 11,860. $8^h\ 40^m\ 14^s$ —27° 44′·8 M. $9\frac{1}{2}$

Also in *a*; in Cor. D.M. = 7·3 mag.
Kapteyn:—Variable = R Pyxidis. Certainly missing.
Chandler gives 8·5 mag. to < 11 mag., redness 6.
h:—"Fiery red, very high coloured," $8\frac{1}{2}$ mag.
G.—Orange red.

No. 69. Z.C. 4821. $8^h\ 59^m\ 35^s$ —24° 35′·5 9

Also in Cor. D.M. = 8·5 mag.
Kapteyn:—Certainly missing.
Cape:—1896, Apr. 19. Seen, 9·3 mag. (colour white).
,, May 20. Seen, 10·2 mag.
,, ,, 26. Not seen, bright moon.
,, June 8. Not seen.
,, ,, 13. Seen, but only with the utmost difficulty, and by glimpses in a dark field, all lights being extinguished; say, $12\frac{1}{2}$ mag.
,, ,, 28. Invisible, under 11 mag.
,, ,, 30. Invisible; no lights and a good night, under 12·5 mag.
Variable. See *Harvard Circular*, No. 7.

No. 70. Z.C. 349. $9^h\ 4^m\ 6^s$ —32° 47′·0 $9\frac{1}{2}$

Kapteyn:—Certainly missing in this position. Dec. probably 4′ in error. Cor. D.M. seems to assume this error.
Cape:—Stars seen are—

h m s	° ′	
9 3 49·6	—32 49′·0	(Comparison star.)
4 1·4±	47′·0	} R.A.'s to nearest sec. only.
4 6·2±	51′·3	} Decs. by micrometer.

The Z.C. is in error, the R.A. belonging to one star evidently being given to the Dec. of another; and in Cor. D.M. the Dec. of the last star is +1′ in error.
Cordoba Observations, vol. xii. p. 347. $\delta = 51'$.

No. 71. Z.C. 706. $9^h\ 9^m\ 5^s$ —23° 20′·8 10

Kapteyn:—In the original zones $\delta - 0'{\cdot}8$. In both positions, however, there is no star, neither on the plates (two pairs) nor in Cor. D.M. If the Catalogue position is correct, the star ought to occur in Orm. Stone's D.M.; if the Zone position is so, in Schönfeld's D.M. In neither of these, however, is the star to be found.
Cape:—1896, April 20. No star at either Dec.
Cordoba:—1899 Mar. 7. $10\frac{1}{4}$ mag.
See Errata in Z.C.

No. 72. Z.C. 2260. $9^h\ 27^m\ 59^s$ —31° 41′·0 10

Also in Cor. D.M. = 9·5 mag.
Cape:—1896, April 20. Seen, mag. 9·2, perhaps orange coloured.
,, ,, 22. Seen, mag. 9·3, too faint for colour.

No. 73. Z.C. 588. $10^h\ 7^m\ 57^s$ —28° 48′·8 10

Marked with a ! in Z.C.
Kapteyn:—Missing in four sweeps.
Cape:—1896, April 20. No star.
Not in Cor. D.M.

No. 74. Z.C. 820. $10^h\ 11^m\ 1^s$ —30° 44′·0 $9\frac{1}{2}$

Also in Cor. D.M. = 9·3 mag.
Kapteyn:—Looked for on plates. At best, most uncertain traces of a star.
Cape:—1896, April 20. Star seen, 9·0 mag., colour doubtful.

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No. 75. Z.C. 1490. $10^h\ 20^m\ 16^s$ $-30°\ 3'·3$ M. $9\frac{1}{2}$

Marked with a ? in Z.C.
Kapteyn:—Certainly missing.
Cape:—1896, April 20. No star.
Not in Cor. D.M.

No. 76. Z.C. 2026. $10^h\ 27^m\ 51^s$ $-26°\ 10'·2$ $9\frac{1}{2}$

Kapteyn:—Certainly missing.
Cape:—This is Z.C. 1987, with an error of about 30^s in R.A.; and is Cor. D.M. 7997, 8·8 mag.

No. 77. G. 14,842. $10^h\ 45^m\ 33^s$ $-20°\ 35'·2$ 8

Also in C., *a*, *l*; and in B.D. = 6·7 mag.
Kapteyn:—This is V Hydræ. Certainly missing on two pairs of plates. The star is extremely red.
Limits of mag. from Chandler, 6·7–9·5.
Cape:—1901, April 8. 7·5 mag., colour 9, remarkable.
Also looked at with the 24-in. McClean O. G. prism; nearly all the colour is in the red.

No. 78. Z.C. 4059. $10^h\ 56^m\ 6^s$ $-28°\ 9'·0$ 10

Marked with a ? in Z.C. (1 obs.).
Cape:—1896, April 20. Not seen.

No. 79. Z.C. 4271. $10^h\ 58^m\ 52^s$ $-24°\ 32'·2$ 10

Also in Cor. D.M. = 10th mag.
Marked with a ? in Z.C. (1 obs.).
Cape:—1896, April 20. Seen, 9·8 mag.

No. 80. Z.C. 1543. $11^h\ 22^m\ 5^s$ $-30°\ 3'·6$ 9

Also in Cor. D.M. = 10th mag.
Marked with a ? in Z.C.
Kapteyn:—Missing in two sweeps on plates $31\frac{1}{2}°$, $11^h\ 12^m$. Certainly missing on plates $31\frac{1}{2}°$, $11^h\ 36^m$.
Cape:—1896, April 25. Star seen; it is 10th mag. There is another star about $11^h\ 21^m\ 58^s$ $-30°\ 4'$, 9·8 mag.

No. 81. M. 3893. $11^h\ 22^m\ 25^s$ $-23°\ 10'·0$ 7·0

Not in Orm. Stone's D.M., B.D., nor Cor. D.M.
Kapteyn:—Certainly missing.
Cape:—1896, April 25. No star.

No. 82. Z.C. 1961. $11^h\ 28^m\ 1^s$ $-24°\ 57'·7$ $9\frac{1}{2}$

Marked with a ? in Z.C. (1 obs.).
Kapteyn:—Missing in four sweeps.
Cape:—1896, April 25. No star. Cor. D.M. $-24°$,9809, $11^h\ 27^m\ 30^s$ $-24°\ 53'·3$ not seen, although looked for carefully.
Both items confirmed 1896, April 30.

No. 83. Z.C. 2342. $11^h\ 33^m\ 19^s$ $-28°\ 59'·7$ $9\frac{1}{2}$

Also in Cor. D.M. = 9·7 mag.
Kapteyn:—Missing in six sweeps on two pairs of plates. The identity with our star (90) $33^m\ 18^s·7$ $-29°\ 0'·9$ might have been thought probable, if *both* stars did not occur in Cor. D.M.
Cape:—1896, April 30. Seen, 9·9 mag., 1896, May 13. Both stars seen, Z.C. 2342 being 10th mag.
See Errata in Z.C.

No. 84. Z.C. 2350. $11^h\ 33^m\ 26^s$ $-24°\ 25'·6$ M. 9

Marked with a ? in Z.C. (1 obs.).
Cape:—1896, April 30. Not seen.
Not in Cor. D.M.

No. 85. Z.C. 2602. $11^h\ 37^m\ 19^s$ $-33°\ 9'·8$ 10

Marked with a ? in Z.C. (1 obs.).
Cape:—1896, April 30. Not seen.
Not in Cor. D.M.

No. 86. Z.C. 2835. $11^h\ 40^m\ 52^s$ $-24°\ 57'·7$ $9\frac{1}{2}$

Marked with a ? in Z.C. (1 obs.).
Kapteyn:—Missing in four sweeps.
Cape:—1896, April 30. Not seen.
,, May 13. ,, dark field.
,, ,, 18. ,,
,, June 8. ,,
Not in Cor. D.M.

No. 87. Z.C. 38. $12^h\ 0^m\ 33^s$ $-24°\ 11'·1$ 9

One observation in Z.C.
Kapteyn:—Identical with Z.C. XI. 4088 ?
Cape:—1896, May 13. A star 9·1 mag. at $11^h\ 59^m\ 54^s$ $-24°\ 11'$ = Z.C. 4088; no star at $12^h\ 0^m\ 33^s$ $-24°\ 11''·1$.
Cordoba:—Is equal to Z.C. 4088. See Errata in Z.C.

No. 88. Z.C. 190. $12^h\ 2^m\ 58^s$ $-29°\ 8'·3$ 9·5

Also in Cor. D.M. = 9·7 mag.
One observation in Z.C.
Kapteyn:—Looked for on plates. On one of them, perhaps, the uncertain trace of a star.
Cape:—1896, May 18. Seen, 9·8 mag., perhaps orange colour.

No. 89. Z.C. 316. $12^h\ 5^m\ 5^s$ $-33°\ 1'·3$ 10

One observation in Z.C.
Not in Cor. D.M.
Kapteyn:—In the original zones $\delta = 2'·3$. Whatever be the correct δ, the star is certainly missing.
Cape:—1896, May 18. Not seen.

No. 90. Z.C. 873. $12^h\ 14^m\ 4^s$ $-32°\ 53'·7$ $9\frac{1}{2}$

Also in Cor. D.M. = 9·4 mag.
One observation in Z.C.
Kapteyn:—Certainly missing.
Cape:—1896, May 18. Seen, 9·4 mag.

No. 91. G. 16,973. $12^h\ 21^m\ 3^s$ $-25°\ 5'·5$ 10

Also in Cor. D.M. = 9·8 mag.
Four observations in G.
Cape:—1896, May 13. Seen, 9·9 mag.

No. 92. *l* 23,597. $12^h\ 31^m\ 8^s$ $-21°\ 37'·2$ 8

Kapteyn:—The star was several times looked for in vain at Bonn. *Vid. Bonn. Beob.*, vol. vii. p. 201.
Cape:—1896, April 21. No star.

No. 93. Z.C. 2313. $12^h\ 38^m\ 47^s$ $-31°\ 51'·7$ 10

Marked with a ? in Z.C. (1 obs.).
Cape:—1896, May 14. Not seen.

No. 94. G. 17,700. $12^h\ 53^m\ 51^s$ $-21°\ 40'·6$ M. 10

Also in B.D. = 10th mag.
One observation in G.
Kapteyn:—Certainly missing; at least, on one of the two plates.
Cape:—Five observations in Cape 1860 Cat., mag. 10–11. Not looked for.

No. 95. *a* 10,288. $12^h\ 54^m\ 7^s$ $-19°\ 46'·7$ $9\frac{1}{2}$

Also in B.D. = 9·7 mag.
Kapteyn:—Certainly missing.
Cape:—1896, May 12, 9·4 mag. (orange).
,, ,, 18, 9·3 ,, orange.
,, June 4, 9·2 ,, (reddish).
,, ,, 16, 9·5 ,, red.
,, ,, 28, 9·9 ,,
,, July 4, (9·0 ,, white).
,, ,, 5, 9·5 ,,
,, ,, 7, 9·5 ,,
,, ,, 13, 9·6 ,,
,, ,, 23, 9·6 ,, (orange).
,, ,, 31, 9·4 ,,
,, Aug. 4, 9·5 ,, orange.
,, ,, 15, 9·7 ,,
,, ,, 23, 9·1 ,,
,, ,, 25, 9·4 ,,
,, ,, 29, 9·3 ,,
,, Sept. 2, 9·5 ,,
,, ,, 4, (9·4) ,,
,, ,, 11, (9·1) ,,
1897, Mar. 20, 9·5 ,, orange.
,, ,, 25, 9·1 ,, yellow.
,, ,, 31, 9·2 ,,
,, Apr. 2, 9·4 ,, yellow.
,, ,, 3, 9·6 ,, red 7·5.
,, ,, 8, 9·6 ,, red.
,, ,, 11, 9·3 ,,
,, ,, 26, 9·5 ,,
,, ,, 27, 9·6 ,,
,, ,, 28, 9·3 ,,
,, ,, 30, 9·5 ,,
,, May 2, 9·5 ,, red.
,, ,, 13, 9·6 ,,
,, ,, 21, 9·3 ,,
,, ,, 22, 9·6 ,,
,, ,, 31, 9·6 ,, red.
,, Aug. 2, 9·5 ,, reddish.
,, ,, 12, 9·3 ,,

New scale and more stars used for comparison henceforth:—
1897, Aug. 13, 9·7 mag.
,, ,, 16, 9·8 ,,
,, ,, 21, 9·7 ,,
,, ,, 25, 9·8 ,,
,, Sept. 3, 9·8 ,,
1898, Mar. 2, [9·5] ,,
,, ,, 11, 9·6 ,,
,, Apr. 13, 9·7 ,,
1899, May 20, 9·4 ,,
,, June 7, 9·5 ,,
,, ,, 11, 9·4 ,, red 6.
See also observations by Wright, *Astr. Journ.*, No. 425.

No. 96. Z.C. 3223. $12^h\ 54^m\ 18^s$ $-29°\ 30'·2$ $9\frac{1}{2}$

Also in Cor. D.M. = 9·6 mag.
Three observations in Z.C.
Cape:—1896, April 29. Seen, about 9·8 mag.; two other stars 8·9 and 10 mag. close to it forming a coarse triple. The 8·9 mag. star is in all three catalogues.

No. 97. *a* 10,302. $12^h\ 55^m\ 42^s$ $-19°\ 22'·3$ $9\frac{1}{2}$

Also in B.D. = 9·8 mag.
Kapteyn:—Certainly missing.
Cape:—1896, April 29. Seen, 10th mag.

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No. 98. Z.C. 553. $13^h\,8^m\,59^s$ —26° 10′·9 M. 9½

Marked with a ? in Z.C.
Cape:—1896, April 18. No star.
Not in Cor. D.M.

No. 99. G. 18,361. $13^h\,22^m\,53^s$—22° 38′·1. Var.

Variable in B.D., and 8·4 mag. in Cor. D.M.
Also in Catalogues *k*, *b*, *c*, *t*, *l*.
Kapteyn:—This star is R Hydræ. Certainly missing.
Cape:—1896, April 18. Seen, 5·0 mag., colour yellow, continuous spectrum, bright in violet—this seen with a non-achromatic eyepiece.
Chandler gives limits of mag. $\frac{3\cdot5}{5\cdot5}$ to 9·7; redness = 5·9.

No. 100. G. 18,402. $13^h\,24^m\,49^s$ —19° 30′·6 11

Also in B.D. = 10 mag.
Cape:—1896, April 18. Seen, 10½ mag.

No. 101. Z.C. 2208. $13^h\,36^m\,33^s$ —27° 4′·6 9½

Marked with a ? in Z.C.
Cape:—1896, April 18. No star in position given, nor within 10ˢ of R.A.

No. 102. Z.C. 2354. $13^h\,38^m\,46^s$ —28° 14′·5 9½

Marked with a ? in Z.C.
Kapteyn:—Missing in four sweeps on two pairs of plates.
Cape:—1896, April 20. No star.
Not in Cor. D.M.

No. 103. Z.C. 2483. $13^h\,41^m\,2^s$ —36° 14′·2 9

Also in G.; and in Cor. D.M. = 9·0 mag.
Kapteyn:—Certainly missing on plates 35½°, $13^h\,53^m\,41^s$; on plates 35½°, $13^h\,28^m\,25^s$, at best, very faint traces.
Cape:—Variable. Confirmed by West, *Astr. Journ.*, No. 414. Is Chandler 4935 = RT Centauri.

No. 104. G. 19,229. $14^h\,4^m\,22^s$—28° 17′·6 8¾

Also in *a*; and in Cor. D.M. = 10th mag.
Kapteyn:—Certainly missing. In Thome's list of suspected variables.
Cape:—Variable. See observations of variable stars.

No. 105. Z.C. 696. $14^h\,10^m\,56^s$—30° 12′·9 10

Also in Cor. D.M. = 9·4 mag.
Kapteyn:—Certainly missing on plates 31½°, $14^h\,24^m$.
Cape:—1896, April 20. Seen, 9·2 mag.; too faint for colour.

No. 106. K. $14^h\,11^m\,30^s$ —20° 16′·1 10½

Also in B.D. = 10th mag.
Cape:—1896, April 20. Seen, 10th mag.

No. 107. K. $14^h\,13^m\,26^s$ —20° 21′·3 11

Also in B.D. = 10th mag.
Cape:—1896, April 20. Seen, 10½ mag.

No. 108. Z.C. 1067. $14^h\,16^m\,38^s$—30° 13′·9 10

Also in Cor. D.M. = 9·5 mag.
One observation in Z.C.
Kapteyn:—Certainly missing.
Cape:—1896, April 22. Seen, 9·6 mag.

No. 109. Z.C. 1154. $14^h\,18^m\,4^s$—29° 1′·1 M. 9½

Also in Cor. D.M. = 9·4 mag.
One observation in Z.C.
Kapteyn:—Missing in six sweeps on two pairs of plates. Looked for on plates 31½°, $14^h\,24^m$, where, perhaps, an uncertain trace may exist.
Cape:—1896, April 22. Seen, 9·5 mag.

No. 110. Z.C. 1476. $14^h\,23^m\,17^s$ -31° 51′·3 10

Also in Cor. D.M. = 9·8 mag.
Marked with a ? in Z.C. (1 obs.).
Kapteyn:—Certainly missing.
Cape:—1896, Apr. 22. Star seen, mag. 9·9. Dec. 31° 49′, as in Cor. D.M.
See Errata in Z.C.

No. 111. Z.C. 2808. $14^h\,44^m\,10^s$—36° 6′·6 8½

Z.C. has two stars differing 2ˢ·5 in *a* (1 obs. of each).
Kapteyn:—On the plates there is certainly only one star, the diameter of which is 16″.
Cordoba Observations, vol. xxii. p. 540:—*a* = $14^h\,44^m\,12^s{\cdot}22$, is same as Z.C. 2811.

No. 112. Z.C. 3173. $14^h\,50^m\,7^s$—35° 19′·8 9½

Marked with a ? in Z.C. (1 obs.).
Kapteyn:—If a correction of +10′ is applied to the declination, the position becomes identical with that of a very faint star observed *once* on the plates, and therefore rejected.
Cape:—1896, April 25. There is a star 10·5 mag. at $14^h\,50^m\,3^s$ —35° 10′. No star at —35° 20′.
Not in Cor. D.M.

No. 113 Z.C. 3726. $14^h\,58^m\,23^s$—28° 44′·5 10

Also in Cor. D.M. = 9·3 mag.
One observation in Z.C.
Kapteyn:—Missing in two sweeps on plates 31½°, $15^h\,12^m$. Certainly missing on plates 26½°, $15^h\,0^m$.
Cape:—1896, April 25. Seen, mag. 9·6, white.

No. 114. Z.C. 91. $15^h\,1^m\,21^s$ —34° 43′·8 9

Also in Cor. D.M. = 9·0 mag.
One observation in Z.C.
Kapteyn:—Looked for on plates. At best, a very uncertain trace could be suspected.
Cape:—1896, April 25. Star here 9·1 mag., perhaps orange coloured.

No. 115. Z.C. 739. $15^h\,10^m\,47^s$—35° 18′·5 9

Also in Cor. D.M. = 9·9 mag. ?
Marked with a ? in Z.C. (1 obs.).
Kapteyn:—Certainly missing. It is uncertain whether Thome's star is identical with that of Z.C., or with an object at $15^h\,10^m\,49^s$ —35° 19′·8, only once observed on the plates, and therefore rejected.
Cape:—1896, April 26. Star seen at $15^h\,10^m\,49^s{\cdot}2$ — 35° 19′·7, mag. 9·5; no other star in immediate neighbourhood.
See Errata in Cor. D.M.

No. 116. Z.C. 878. $15^h\,12^m\,56^s$—27° 50′·8 9·2

Also in Cor. D.M. = 9·3 mag.
Two observations in Z.C.
Kapteyn:—At best, faint traces.
Cape:—1896, April 26. Seen, 9·0 mag., orange.

No. 117. *a* 11,907. $15^h\,20^m\,53^s$—29° 39′·0 M. 9

Kapteyn:—"In this position no star in the sky"—Weiss. *Vid.* footnote to No. 11,907 of his *Cat. of Arg. Zones.*
Cape:—1896, April 26. No star.
Not in Cor. D.M.

No. 118. Z.C. 1607. $15^h\,23^m\,27^s$—26° 25′·1 9½

Marked with a ? in Z.C. (1 obs.).
Kapteyn:—Certainly missing.
Cape:—1896, April 26. No star. There is a 10th mag. star about $15^h\,23^m\,33^s$—26° 24′. (Two stars, each about 9·5 mag., near $15^h\,23^m$—26° 20′; not in Cor. D.M. or C.P.D.)

No. 119. Z.C. 1880. $15^h\,27^m\,27^s$—36° 17′·7 9½

Marked with a ? in Z.C. (1 obs.).
Kapteyn:—Certainly missing.
Cape:—1896, April 26. No star.

No. 120. Z.C. 1979. $15^h\,28^m\,47^s$—26° 18′·9 10

Marked with a ? in Z.C. (1 obs.).
Kapteyn:—Certainly missing.
Cape:—1896, April 26. No star.

No. 121. Z.C. 2173. $15^h\,31^m\,37^s$—26° 53′·8 9½

Also in Cor. D.M. = 9·2 mag.
One observation in Z.C.
Kapteyn:—Missing in two sweeps on plates 26½°, $15^h\,45^m\,0^s$. Looked for on plates 26½°, $15^h\,28^m\,30^s$, where, at best, an extremely faint trace of a star could be suspected.
Cape:—1896, April 27. Star seen, mag. about 9·2.

No. 122. *a* 12,079. $15^h\,34^m\,46^s$ —20° 46′·6 9

Also in B.D. = variable.
Kapteyn:—This is U Libræ. Certainly missing.
Chandler gives redness = 3·4; mag. 9 to < 14.

No. 123. Z.C. 3148. $15^h\,44^m\,42^s$—36° 50′·3 10

Marked with a ? in Z.C. (1 obs.).
Kapteyn:—Certainly missing.
Cape:—1896, April 27. Not seen.
Not in Cor. D.M.

No. 124. Z.C. 3164. $15^h\,44^m\,56^s$—37° 7′·0 9½

Also in Cor. D.M. = 9·9 mag.
Marked with a ? in Z.C. (1 obs.).
Kapteyn:—Certainly missing.
Cape:—1896, April 27. Seen, about 9·9 mag.
According to Thome, star variable. See *Cordoba Observations*, vol. xvii. p. 541.

No. 125. Z.C. 3166. $15^h\,44^m\,57^s$—34° 10′·5 9

Also in Cor. D.M. = 9·2 mag.
One observation in Z.C.
Kapteyn:—Certainly missing.
Cape:—1896, April 27. Seen, mag. about 8·9 (full moon).
1896, June 4. Mag. 9·2, reddish.
,, ,, 15. ,, 9·5, red.
,, ,, 28. ,, 9·3, ,,
No good comparison star near. Average mag., 9·2 from 5 obs., red.

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M.

No. 126. G. 21,504. $15^h 45^m 22^s$ —35° 55′·3 Var.

Also in Z.C. = mag. 9, marked with a ? (1 obs.); and in Cor. D.M. = 8·9 mag.
Kapteyn:—This is R Lupi. Certainly missing on plates 35¼°, $15^h 34^m$; and on plates 35½°, $16^h 0^m$.
Chandler gives 9 mag. to < 11 mag.

No. 127. Z.C. 3256. $15^h 46^m 27^s$ —36° 24′·5 9½

Also in Cor. D.M. = 9·4 mag.
One observation in Z.C.
Kapteyn:—Missing in four sweeps on two pairs of plates. Certainly missing on plates 35½°, $16^h 0^m 0^s$; on plates 35½°, $15^h 34^m 44^s$, at best, very uncertain traces.
Cape:—1896, April 27. Seen, about 9·3 mag.

No. 128. *t* 7386. $15^h 47^m 14^s$ —24° 57′·1 6

Kapteyn:—Identical with *t* 7376 ?
Cape:—1896, April 27. No star there.
Not in Downing's revision.

No. 129. Z.C. 3418. $15^h 48^m 43^s$ —34° 3′·5 9

Z.C. has two stars at a distance of about 20″ (1 obs.). Recorded in Cor. D.M., mag. 8·5 Dpl.
Kapteyn:—On the plates there is but one star with no trace of duplicity, though the diameter is only 14″.
Cape:—1896, April 27. A course double there, 8·8 and 9·3 mags., comes *n.f.* 20″ and 1½″±.

No. 130. Z.C. 3539. $15^h 50^m 25^s$ —36° 4′·7 9½

Also in Cor. D.M. = 9·6 mag.
One observation in Z.C.
Kapteyn:—Certainly missing.
Cape:—1896, April 29. Seen, mag. about 9·7.

No. 131. Z.C. 3548. $15^h 50^m 31^s$ —26° 0′·2 9½

Marked with a ? in Z.C. (1 obs.).
Kapteyn:—Missing in four sweeps.
Cape:—1896, May 7. Not seen.
Not in Cor. D.M.

No. 132. Z.C. 3719. $15^h 52^m 56^s$ —29° 33′·9 9½

Also in Cor. D.M. = 9·5 mag.
One observation in Z.C.
Kapteyn:—Certainly missing.
Cape:—This star is variable. See under Variable Stars.

No. 133. Z.C. 3740. $15^h 53^m 21^s$ —34° 30′·1 9½

Also in Cor. D.M. = 9·5 mag.
One observation in Z.C.
Kapteyn:—Certainly missing.
Cape:—1896, April 30. Seen, mag. 9·4.

No. 134. Z.C. 3774. $15^h 53^m 49^s$ —26° 42′·9 9½

Marked with a ? in Z.C. (1 obs.).
Kapteyn:—Missing in two sweeps on plates 26½°, $15^h 45^m 0^s$. Certainly missing on plates 26½°, $16^h 7^m 30^s$.
Cape:—1896, April 30. No star.

M.

No. 135. Z.C. 3905. $15^h 55^m 42^s$ —30° 23′·2 9½

Also in Cor. D.M. = 10th mag.
Marked with a ? in Z.C. (1 obs.).
Kapteyn:—Certainly missing.
Cape:—1896, Apr. 30, 11·5 mag. (in approx. pos.)
,, May 7, 10·3 ,,
,, ,, 9, 11·5 ,,
,, ,, 12, 10·3 ,, (near position)
,, ,, 13, 10·5 ,,
,, ,, 17, 11·2 ,,
,, June 4, inv. careful search.
,, ,, 15, 10·7 mag.
,, ,, 28, 11·0± ,,
,, July 13, 10·5 ,,
,, ,, 15, 10·5 ,,
,, Aug. 1, 11·0 ,, α 46ˢ (?).
,, ,, 8, 10·2 ,,
,, ,, 15, 10·0 ,,
,, ,, 23, 10·0 ,,
,, ,, 25, 10·0 ,,
,, ,, 29, 9·9 ,,
,, Sept. 2, 10·5 ,,
,, ,, 3, 10·0 ,,
,, ,, 7, 10·0 ,,
,, ,, 15, 11·0 ,,
,, ,, 22, 10·0 ,,
,, ,, 30, 9·9 ,,
,, Oct. 6, 10·3 ,,
,, ,, 7, 9·9 ,,
,, ,, 10, [10·0] ,,
1897, May 13, inv. < 10·2 mag. certainly.
,, ,, 22, 11·0 mag.
,, ,, 31, 11·5 ,,
,, June 30, 10·1 ,,
,, July 31, 9·7 ,,
,, Aug. 13, 10·3 ,,
,, Sept. 2, 9·85 ,,
,, ,, 5, 10·7 ,,
,, ,, 17, 10·0 ,,

Map revised.

1897, Sept. 18, 10·2 mag.
,, ,, 23, 10·0 ,,
,, ,, 25, 10·5 ,,
,, Oct. 3, 10·5 ,,
,, ,, 19, <9·5 ,, inv.
1898, Apr. 7, 10·3± ,,
,, ,, 29, inv.
,, May 15, 10·5 ,,
,, ,, 26, 10·0 ,,
,, June 8, 10·5 ,,
,, ,, 18, 10·2 ,,
,, Sept. 19, 10·6 ,,
,, Oct. 18, 10·5 ,,
1899, Feb. 2, 10·2 ,,
,, May 19, 10·5 ,,
1901, Oct. 7, 10·3 ,,
This is probably not the Z.C. star.
See Errata in Z.C.

No. 136. Z.C. 4006. $15^h 57^m 8^s$ —23° 45′·2 8½

Also in Cor. D.M. = 9·3 mag.
One observation in Z.C.
Kapteyn:—Looked for on four different plates. Only on one of these an extremely faint speck was found which might possibly be the first trace of the image of a star.
Cape:—Is variable. Confirmed by West, *Astr. Journ.*, No. 414. = Chandler 5752, RZ Scorpii. See Observations of Variable Stars.
The two stars, Cor. D.M. —23°,
No. 12664. 10 mag. $15^h 56^m 40^s$ —23° 48′·9,
,, 12667. 10 ,, 45ˢ 48′·7,
precede this star, but between 1896 Aug. 1 and 1897 May 22, the former only was identified. In 1899, however, I noticed a second star of the 9·9 mag. which seemed new. Professor E. C. Pickering was written to, and he kindly examined some sixty Harvard photographs of this region, but found no variation exceeding one or two tenths of a magnitude. The identity of the Cor. D.M. stars is not clearly made out.

M.

No. 137. Z.C. 4181. $15^h 59^m 46^s$ —34° 5′·9 9½

Also in Cor. D.M. = 9·7 mag.
One observation in Z.C.
Kapteyn:—At best, the faintest trace of a star on the plates.
Cape:—1896, May 7, 9·0 mag.
,, ,, 9, 9·6 ,,
,, June 8, 9·7 ,,
,, ,, 15, 9·6 ,, white.
,, ,, 28, 9·7 ,,
Difficult to identify, as there are stars about not in Cor. D.M. Observations of May 7 probably erroneous.

No. 138. K. $16^h 1^m 16^s$ —20° 27′·8 9

Kapteyn:—Declination 2′·5 in error ?
Cape:—1896, May 7. No, the declination is correct. There are two stars, same R.A. and differing 2′·5 in Dec., the brighter, 8·0 mag., = C.P.D. —20°,6295. The star C.P.D. —20°,6293 is red, and its mag. = 9·2 (given as 10·2 in C.P.D.).

No. 139. Z.C. 778. $16^h 10^m 51^s$ —33° 3′·0 9½

Also in Cor. D.M. = 9·4 mag.
Two observations in Z.C.
Kapteyn:—Missing in two sweeps on plates 31½°, $16^h 0^m$; in two sweeps on plates 31½°, $16^h 24^m$; certainly missing on plates 35½°, $16^h 0^m$.
Cape:—1896, May 10, 9·0 mag.
,, ,, 12, [11½ ,,]
,, ,, 13, 9·0 ,,
,, ,, 14, 9·0 ,, orange.
,, ,, 20, 9·1 ,, white.
,, June 8, 9·5 ,, ±
,, ,, 13, 9·5 ,, red.
,, ,, 15, 9·1 ,, perhaps orange.
,, ,, 28, 9·1 ,, orange.
,, Aug. 1, 9·2 ,,
,, ,, 16, 9·0 ,, [orange].
,, ,, 23, 9·1 ,, red.
,, ,, 28, 9·4 ,,
,, Sept. 2, 9·2 ,,
,, ,, 7, 9·1 ,,
,, ,, 15, 9·1 ,, [orange].
,, ,, 22, 9·1 ,, red.
,, ,, 26, 9·1 ,,
,, ,, 30, 9·1 ,,
,, Oct. 6, 9·0 ,,
,, ,, 20, 9·1 ,,
1897, May 31, 9·0 ,,
,, July 1, 9·2 ,,

No. 140. Z.C. 782. $16^h 10^m 52^s$ —25° 45′·8 9½

Also in Cor. D.M. = 9·4 mag.
One observation in Z.C.
Kapteyn:—Certainly missing.
Cape:—1896, May 7. Seen, 9·5 mag., orange.

No. 141. Z.C. 784. $16^h 10^m 53^s$ —36° 49′·5 10

Marked with a ? in Z.C. (1 obs.).
Cape:—1896, May 7. No star.
Not in Cor. D.M.

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M.

No. 142. Z.C. 875. $16^h\,12^m\,22^s$ —23° 47′·2 9½

In Orm. Stone's D.M. = 9·1 mag.; and in Cor. D.M. = 9·5 mag.
One observation in Z.C.
Kapteyn :—Certainly missing.
Cape :—1896, May 7. Seen, 9·4 mag., orange.
On Chacornac's Carte, No. 49, it is marked as a star of the 9th mag.

No. 143. Z.C. 940. $16^h\,13^m\,13^s$ —34° 41′·1 9½

Marked with a ? in Z.C. (1 obs.).
Kapteyn :—Certainly missing on plates 35½°, $16^h\,0^m$.
Cape :—1896, May 7. No star here.
Not in Cor. D.M.

No. 144. G. 22,201. $16^h\,15^m\,56^s$ —26° 13′·5 7¼

Kapteyn :—On plates 26½°, $16^h\,30^m$ extremely faint traces of neb. may be suspected. On the plates 26½°, $16^h\,7^m\,30^s$ not even such traces can be found.
Cape :—Seen by Lacaille, who considered it had no stars. It is, however, completely resolvable—a cloud of stars, one as bright as 9·5 mag. to the smallest visible, irregularly globular with a rift.
1896, May 7. No star so bright as 7¼ mag. seen.
Only one observation in G. (Nova ?)
This position is in Messier 4 = Dreyer, N.G.C., No. 6121.

No. 145. Z.C. 1149. $16^h\,16^m\,26^s$ —26° 1′·8 9½

Marked with a ? in Z.C. (1 obs.).
Kapteyn :—Certainly missing on two pairs of plates.
Cape :—1896, May 7. No star.
Not in Cor. D.M.

No. 146. Z.C. 1196. $16^h\,17^m\,2^s$ —34° 33′·9 9½

Also in Cor. D.M. = 9·6 mag.
One observation in Z.C.
Kapteyn :—Certainly missing.
Cape :—1896, May 7. Mag. 9·6.

No. 147. Z.C. 1236. $16^h\,17^m\,35^s$ —34° 55′·6 10

Marked with a ? in Z.C. (1 obs.).
Kapteyn :—Certainly missing.
Cape :—1896, May 7. No star.
Not in Cor. D.M.

No. 148. Z.C. 1313. $16^h\,18^m\,39^s$ —35° 12′·0 10

Also in Cor. D.M. = 10th mag.
One observation in Z.C.
Kapteyn :—Certainly missing.
Cape :—1896, May 7. Seen, 10th mag. Secs. of R.A. = 40+.

No. 149. Z.C. 1980. $16^h\,28^m\,39^s$ —30° 58′·5 9

Also in Cor. D.M. = 8·9 mag.
One observation in Z.C.
Kapteyn :—Certainly missing.
Cape :—Certainly variable. See under Variable Stars. Limits of mag., 7·8–9·65; colour, 7·5.

M.

No. 150. Z.C. 2278. $16^h\,32^m\,36^s$ —32° 7′·9 8½

Cor. D.M. gives 7·5 mag. colour, and g = 9th mag. Also in G. Red.
Z.C. = 9 mag. (10th Aug. '73); = 8 mag., red (11th Aug. '73). No mag. recorded in G.
h :—8 mag. Deep red like a drop of blood.
Kapteyn :—Certainly missing on plates 31½°, $16^h\,48^m$.
Cape :—

1896, May	7	9·2	mag.,	red.	
,, ,,	10	8·2	,,	very red.	
,, ,,	12	9·3	,,	red	(F.)
,, ,,	12	9·4	,,	very red.	
,, ,,	13	9·2	,,	red.	
,, ,,	14	9·4	,,		
,, June	13	9·3	,,	red.	
,, ,,	15	9·1	,,	,,	
,, ,,	28	9·3	,,	,,	
,, Aug.	1	8·8	,,	very red.	
,, ,,	16	8·9	,,	,,	8.
,, ,,	23	8·8	,,	,,	9.
,, ,,	28	8·8	,,	,,	9.
,, Sept.	2	8·8	,,	,,	
,, ,,	7	8·6	,,	intensely red.	
,, ,,	15	8·7	,,	very red.	
,, ,,	19	8·8	,,	,,	
,, ,,	25	[8·9]	,,		
,, ,,	27	8·6	,,	very red.	
,, ,,	30	8·9	,,	,,	
,, Oct.	6	8·9	,,	,,	
,, ,,	20	8·9	,,	,,	
1897, May	21	8·3	,,	red, 9.	
,, July	1	8·7	,,	,, 9·5.	
,, Aug.	5	9·0	,,	very red.	
,, ,,	13	8·8	,,	red, 9.	
,, ,,	31	9·0	,,	,, 9.	
,, Sept.	17	9·1	,,	,, 10.	
,, ,,	23	8·8	,,	,, 9.	
,, Oct.	19	8·7	,,	,, 9.	
1898, May	16	8·0	,,	,, 8·5.	
,, ,,	26	8·0	,,	very red, 9.	
,, June	1	8·2	,,	red, 9.	
,, ,,	10	8·4	,,	,, 9·5.	
,, ,,	22	8·4	,,	,, 9.	
,, ,,	30	8·3	,,		
,, July	15	8·3	,,		
,, Oct.	17	8·9	,,	good.	
1899, May	11	8·6	,,	red, 9.	
1900, Sept.	1	8·3	,,	,, 8.	

Range :—8·0 mag. to 9·4 mag., colour 9·0. A very difficult star to estimate, and the comparison stars, putting aside the difference of magnitude, are not very suitable.
Picked up in 18-in. refractor by chance 9/9/1900; then estimated. Mag. = 8·5; colour = 9·0.
See also *Astr. Nach.*, vol. cxlii. p. 76, No. 3.
,, *Astr. Journ.*, ,, xix. p. 76.

No. 151. Z.C. 2450. $16^h\,35^m\,12^s$ —32° 28′·0 10

Also in Cor. D.M. = 9·0 mag.
One observation in Z.C.
Kapteyn :—Certainly missing.
Cape :—1896, May 10. Seen, 9·2 mag.

No. 152. Z.C. 2492. $16^h\,35^m\,40^s$ —34° 56′·9 10

Marked with a ? in Z.C. (1 obs.).
Kapteyn :—Certainly missing.
Cape :—1896, May 10. Not seen.
C.Z. in error: $\alpha = 24^s$. See Errata.

No. 153. G. 22,779. $16^h\,43^m\,53^s$ —27° 24′·3 10¼

Also in Cor. D.M. = 9·7 mag.
One observation in G.
Cape :—1896, May 12. Seen, 9·7 mag.

M.

No. 154. Z.C. 3097. $16^h\,44^m\,0^s$ —23° 15′·7 10

One observation in Z.C.
Kapteyn :—In the original zones $\alpha = 43^m\,47^s$. In neither of the two positions is there a star in either C.P.D., Cor. D.M., or Orm. Stone's D.M.
Cape :—1896, May 12. Not seen in either position. Not on Chacornac's Carte, No. 51.
See Errata in Z.C.

No. 155. Z.C. 3114. $16^h\,44^m\,11^s$ —34° 29′·4 9½

Marked with a ? in Z.C. (1 obs.).
Not in Cor. D.M.
Kapteyn :—Certainly missing.
Cape :—1896, May 12. No star there, but there is a 10th mag. star same Dec. 10^s *pr.*

No. 156. Z.C. 3703. $16^h\,51^m\,47^s$ —33° 13′·7 10

One observation in Z.C.
Kapteyn :—Certainly missing on plates 35½°, $16^h\,50^m\,32^s$.
Cape :—1896, May 12. Not seen.
Originally identified in Cor. D.M. with a 9·5 mag. star 3′ N.
See Errata in Cor. D.M.

No. 157. Z.C. 3763. $16^h\,52^m\,45^s$ —34° 4′·9 10

Marked with a ? in Z.C. (1 obs.).
Kapteyn :—Certainly missing.
Cape :—1896, May 12. No star.
Not in Cor. D.M.

No. 158. Z.C. 3912. $16^h\,54^m\,49^s$ —34° 39′·9 10

Marked with a ? in Z.C. (1 obs.).
Kapteyn :—Certainly missing.
Cape :—1896, May 12. No star in place.
Not in Cor. D.M.

No. 159. Z.C. 4005. $16^h\,56^m\,6^s$ —27° 1′·8 10

Also in Cor. D.M. = 9·8 mag.
One observation in Z.C.
Kapteyn :—Missing in four sweeps.
Cape :—1896, May 12. Seen, 9·9 mag.

No 160. Z.C. 4086. $16^h\,57^m\,13^s$ —28° 49′·4 10

Also in Cor. D.M. = 9·2 mag.
One observation in Z.C.
Kapteyn :—Missing in six sweeps on three pairs of plates. Looked for on plate 31½°, $16^h\,48^m$, where only traces of a star image could be suspected.
Cape :—1896, May 12. Seen, 9·4 mag.

No. 161. Z.C. 1. $17^h\,0^m\,0^s$ —29° 6′·3 10

Also in Cor. D.M. = 9·6 mag.
One observation in Z.C.
Cape :—1896, May 13. Seen, 9·5 mag.

No. 162. Z.C. 7. $17^h\,0^m\,5^s$ —34° 59′·9 9½

One observation in Z.C.
Kapteyn :—In this position certainly missing on two pairs of plates. There is a star, 10·0 mag., at $17^h\,0^m\,9^s·2$ —35° 0′·0, which occurs also in Cor. D.M. If, however, there is no error in Z.C., the two stars cannot be identical.
Cape :—1896, May 12. No star in place given. The star at $17^h\,0^m\,9^s$ —35° 0′ was seen.
δ = 49′. See Errata in C.Z. Even so neither in Cor. D.M. nor C.P.D.

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M.

No. 163. Z.C. 169. $17^h\ 2^m\ 29^s$ —35° 50′·6 9½

Also in Cor. D.M. = 9·2 mag.
Two observations in Z.C.
Kapteyn :—Missing in three sweeps on two pairs of plates. Certainly missing on plates 35½°, $16^h\ 50^m\ 32^s$.
Cape :—1896, May 12. Seen, 9·1 mag., orange red. Seen, 9·0 mag., red. (F.)

No. 164. Z.C. 1052. $17^h\ 15^m\ 25^s$ —34° 50′·3 9½

Marked with a ? in Z.C. (1 obs.).
Cape :—1896, May 13. Not seen.
Not in Cor. D.M.

No. 165. Z.C. 1380. $17^h\ 20^m\ 28^s$ —25° 59′·3 10

Also in Cor. D.M. = 9·9 mag.
One observation in Z.C.
Kapteyn :—Missing in four sweeps.
Cape :—1896, May 13. Seen, 9·8 mag.

No. 166. G. 23,701. $17^h\ 22^m\ 21^s$ —19° 22′·2 7·5

Also in C., = 8·5 mag., 3 obs.; in *a*, = 8, 8, and 7, 3 obs.; in Schönfeld's D.M., = 7·8 mag., *roth*; and in G., *red*. Also in W.
Kapteyn :—Certainly missing.
Cape :—1896, May 13. Seen, 8·0 mag., very red.

No. 167. Z.C. 1568. $17^h\ 23^m\ 11^s$ —24° 8′·4 10

Marked with a ? in Z.C. (1 obs.).
Kapteyn :—In the original zones δ = 23° 44′·4. Near to this position is a star, which, however, differs still too much in position and mag. to make the identity probable.
Cape :—1896, May 13. No star in position given. There is, of course, the 8·0 mag. star = Lal. 31,806 at $17^h\ 23^m\ 13^s$ —23° 44′. Confirmed 1896 May 14.
Not in Cor. D.M.

No. 168. *G.* $17^h\ 31^m\ 45^s$ —32° 13′·6 9½

Kapteyn :—Certainly missing. In G.'s cluster Cat. of Messier 6, No. 15. *G.* has but one observation.
Cape :—Cor. D.M. has two stars near here, viz., 9·6 mag., $17^h\ 31^m\ 43^s{\cdot}1$ —32° 13′·1; and 9·7 mag., $17^h\ 31^m\ 44^s{\cdot}5$ —32° 12′·9, both seen on 1896, May 13; but the R.A.'s, as measured from the 7·3 mag. star *pr.*, are about 1 sec. too small. These are *G.* 13 and 16. *G.* 15 is not seen; it is probably an observation of *G.* 16, with an error of 1′ in Dec. This agrees with Gould's conclusion in *Cordoba Photos*, p. 471. Not seen on several other occasions in September 1896.

No. 169. Z.C. 2293. $17^h\ 33^m\ 34^s$ —34° 57′·1 9½

Kapteyn :—Certainly missing.
Cape :—1896, May 13. No star.
Not in Cor. D.M.

No. 170. Z.C. 2401. $17^h\ 35^m\ 4^s$ —28° 10′·0 10

Also in Cor. D.M. = 9·8 mag.
One observation in Z.C.
Cape :—1896, May 13. Star 9·8 mag., red.

No. 171. *G.* $17^h\ 40^m\ 41^s$ —34° 59′·7 9½

Kapteyn :—Certainly missing. In Cum. Messier 7 (No. 21). *G.* has but one observation.
Cor. D.M. has a star at $17^h\ 40^m\ 39^s$ —35° 0′·5, 10 mag.
Cape :—The observations made on 1896, May 13, give a 9·5 mag. star at $17^h\ 40^m\ 40^s$ —35° 0′, or about midway between the positions of *G.* and Cor. D.M.

M.

No. 172. K. $17^h\ 43^m\ 33^s$ —26° 40′·6 10·7

Also in Cor. D.M. = 10th mag.
Cape :—1896, May 13. Seen, 9·9 mag.

No. 173. Z.C. 3039. $17^h\ 44^m\ 52^s$ —22° 50′·9 9½

9·4 mag. in B.D. and Cor. D.M.
One observation in Z.C.
Kapteyn :—Certainly missing.
Cape :—1896, May 13. Seen, 9·5 mag., orange colour.

No. 174. Z.C. 3170. $17^h\ 46^m\ 50^s$ —23° 12′·5 9

Also in Orm. Stone's D.M. = 9·0 mag., and in Cor. D.M. = 9·6 mag.
One observation in Z.C.
Kapteyn :—Certainly missing.
Cape :—1896, May 13. Seen, 9·8 mag.
,, Aug. 23. ,, 9·8 ,,
,, Oct. 24. ,, 9·5 ,, red = 8.
Probably slightly variable.

No. 175. *G.* $17^h\ 46^m\ 52^s$ —34° 15′·7 7½

Not in *Cordoba Photos*. Not in Cor. D.M.
Kapteyn :—Certainly missing. In Cum. Messier 7 (No. 115). *G.* has but one observation.
Cape :—1896, May 13. No star of this brightness near the position; several 10½ and 11th mags. within 3′.

No. 176. Z.C. 3255. $17^h\ 48^m\ 4^s$ —28° 0′·4 10

One observation in Z.C.
Not in Cor. D.M.
Kapteyn :—Certainly missing.
Cape :—1896, May 13, 9·8 mag., very red.
,, ,, 14, 9·7 ,, ,,
,, June 8, 9·9 ,, red.
,, ,, 15, 9·7 ,, ,,
,, ,, 28, 9·9 ,, ,,
,, July 11, 9·6 ,, ,,
,, ,, 23, 9·7 ,, ,,
,, ,, 31, 9·7 ,, ,,
,, Sept. 3, 9·6 ,, ,,
,, ,, 7, 9·9 ,, ,,
,, ,, 15, 9·9 ,, ,,
,, ,, 23, 9·6 ,, ,,
,, ,, 27, 9·8 ,, ,,
,, Oct. 6, 9·9 ,, ,,
,, ,, 20, 9·8 ,, ,,
,, ,, 30, 9·8 ,, ,,
1897, June 1, 9·6 ,, redness = 9.
Average mag. = 9·82.
No variability proved by the observations.

No. 177. G. 24,365. $17^h\ 49^m\ 36^s$ —24° 7′·4 9¼

Also in Z.C. = 9th mag. (1 obs.); and in Cor. D.M. = 9·5 mag.
Kapteyn :—Certainly missing.
Cape :—1896, May 13. Seen, 9·6, red.
1898, Oct. 23. ,, 9·7, ,, = 8.

No. 178. G. 24,612. $17^h\ 58^m\ 35^s$ —28° 30′·7 10¼

Also in Cor. D.M. = 9·9 mag.
Kapteyn :—Certainly missing.
Cape :—1896, May 13. Seen, 10th mag.

No. 179. Z.C. 201. $18^h\ 2^m\ 55^s$ —23° 14′·5 9½

Marked with a ? in Z.C. (1 obs.).
Not in Orm. Stone's D.M.
,, ,, Cor. D.M.
Cape :—1896, May 13. Not seen.

M.

No. 180. Z.C. 949. $18^h\ 14^m\ 44^s$ —26° 56′·7 9½

Also in Cor. D.M. = 10th mag.
One observation in Z.C.
Cape :—1896, May 13. Seen, 9·9 mag.

No. 181. G. 25,390. $18^h\ 28^m\ 50^s$ —24° 1′·1 10

Also in Cor. D.M. = 9·9 mag.
Kapteyn :—Missing in six sweeps on two pairs of plates.
Cape :—1896, May 13. Near a fine globular cluster of stars 9·5 to 11th mag.
,, ,, 14. Mag. 9·5, red. It has a *comes* closely *n.f.* On the *s.f.* part of the cluster, it is the brightest star there.
,, June 8. 9·4 mag.
,, ,, 13. About 9·6 mag.

No. 182. *b* XVIII. 132. $18^h\ 45^m\ 22^s$ —23° 54′·7 9·0

Not in Orm. Stone's D.M.
,, ,, Cor. D.M.
Kapteyn :—Missing in four sweeps.
Cape :—1896, May 13. No star in position; a 10th mag. about 4 secs. *pr.*

No. 183. Z.C. 97. $19^h\ 2^m\ 12^s$ —24° 47′·6 10

One observation in Z.C.
Kapteyn :—Thome evidently assumes a correction of 10′ in δ. In the C.P.D., however, the declination of Thome's star is 24° 58′·2, so that a correction of 10′·6 would be required, which seems improbable.
Cape :—1896, May 13. No star at 24° 47′·6; the Dec. of the other star is 24° 59′·0 + 0′·9 = 24° 58′·1; the R.A. of the comparison star = $19^h\ 2^m\ 16^s$.
Cordoba Observations, vol. xvii. p. 541. Dec. to be corrected to 58′ 7″·6. Therefore star identical with that of C.P.D.

No. 184. *a* 15,155. $19^h\ 6^m\ 36^s$ —19° 4′·3 9

Also in B.D. = 9·7 mag.
Kapteyn :—Looked for on plates. At best, a faint trace on check plate only.
Cape :—1895, Nov. 7. Correct: about 10th mag. Follows *a* 15,147 by 30ˢ, and is 28″ South. (F.)
In *Harvard College Circular*, No. 6, 1896, Mar. 10, this star is registered as a new variable 9·7 mag. to 11·1 mag., with another variable 36 secs. *f.* 3′ N. 9·9 to < 13·3. In Chandler III. as RW and RX Sagittarii.

No. 185. G. 26,402. $19^h\ 9^m\ 21^s$ —19° 31′·5 Var.

Also in B.D., variable; and in C., *a*, *b*.
Kapteyn :—This is R Sagittarii. Certainly missing on plates 21½°, $19^h\ 20^m$.
Chandler gives redness 3·6, mag. $\frac{7{\cdot}0}{8{\cdot}0}$ to 12·5.

No. 186. *l* 36,910. $19^h\ 25^m\ 26^s$ —20° 46′·8 8

Kapteyn :—Certainly missing. The star was several times looked for in vain at Bonn, and is also missing in the *Markree Cat.* *Vid. Bonn Beob.*, vol. vii. p. 197.
Cape :—1895, Nov. 7. No star in place. (F.)

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No. 187. a 15,499. $19^h 26^m 51^s$ —27° 23′·5 M. 9½

The star was several times looked for in vain at Vienna, and Prof. Weiss suspects the identity with a 15,498. *Vid.* his Cat., p. 419, footnote.
Cape:—1895, Nov. 7. No trace of a star in place. (F.)
Not in Cor. D.M.

No. 188. G. 26,912. $19^h 32^m 8^s$—31° 14′·8 Neb.

In Cor. D.M. mag. given as Neb. Also in S., Messier 55, and Dreyer G.C. 6809.
Kapteyn:—No trace of nebulosity can be detected on plates.
Cape:—1895, Nov. 7. Partly resolvable nebula, about 4′ in diameter, studded with starpoints of 11-12 magnitude. (F.)

No. 189. Z.C. 1476. $19^h 34^m 43^s$ —26° 18′·7 7½

Also in Cor. D.M. = 9·8 mag.
Kapteyn:—Perhaps a faint speck on one of the two plates. Mag. in error in Z.C. ?
Cape:—1895, Nov. 8. 9¾ mag. in right place. (F.)
Cordoba Observations, vol. xvii. p. 541. For 18′ read 37′. Is Vesta.

No. 190. Z.C. 1555. $19^h 36^m 23^s$ —31° 7′·2 10

Also in Cor. D.M. = 9·5 mag.
Kapteyn:—At best, very faint and uncertain traces of a star.
Cape:—1895, Nov. 7. Magnitude half way between Z.C. 1546 and Cor. D.M. 17,006, and therefore equals about 9·5. (F.)

No. 191. Z.C. 1667 $19^h 39^m 22^s$ —26° 51′·1 7½

Marked with a ? in Z.C.
Kapteyn:—Missing in two sweeps on plates 26½°, $19^h 52^m 30^s$. Certainly missing on plates 26½°, $19^h 30^m 0^s$.
Cape:—1895, Nov. 8. No star in place. The object observed at Cordoba was Vesta. (F.)

No. 192. Z.C. 2123 $19^h 51^m 35^s$ —28° 5′·9 9½

Marked with a ? in Z.C.
Cape:—1895, Nov. 7. There is a star 11th mag. at $19^h 51^m 24^s$—28° 7′ 10″. No other. (F.)
(This is Cor. D.M.—28°, No. 16,313, mag. 10.)

No. 193. K. $19^h 56^m 57^s$ —23° 31′·3 11

Also in Cor. D.M. = 9·8 mag.
Cape:—1895, Nov. 8. Mag = 10. (F.)
On Paris Atlas Ecliptique No. 60 given as 11m, but neighbouring stars are also estimated too faint.

No. 194. G. 27,732. $20^h 8^m 16^s$ —32° 57′·6 10

Also in Cor. D.M. = 9·6 mag.
Kapteyn:—Certainly missing.
Cape:—1895, Nov. 8. Mag. = 10 or 9·8. (F.)

No. 195. K. $20^h 20^m 20^s$ —18° 59′·5 10½

Also in B.D. = 10th mag.
Cape:—1895, Nov. 8. Mag. = 10 or 10·2. B.D. 5816 and 5819 are the same mag., about 9·0. (F.)

No. 196. M. 10,412. $20^h 25^m 16^s$ —22° 6′·7 M. 9½

Also in Cor. D.M. = 9·7 mag.
Cape:—1895, Nov. 8. Mag. = 9·7. Equal to B.D. 5468. (F.)
Variable. See Variable Stars.

No. 197. Z.C. 1134. $20^h 34^m 14^s$ —29° 35′·9 9½

Marked with a ? in Z.C.
Cape:—1895, Nov. 7. No star in place. (F.)
Not in Cor. D.M.

No. 198. W. 9265. $20^h 38^m 39^s$ —35° 36′·9 10

In *Washington Cat.* but one observation (or, more exactly, one in a in 1869, and one in δ in 1862).
Cape:—1895, Nov. 7. There is no star exactly in the place. There is a 9¾ mag. or a little brighter star at $20^h 38^m 59^s·6$—35° 38′·3. (F.)
Cor. D.M. has:—9·4 $20^h 38^m 39^s$—35° 32′·4
9·6 20 38 58 —35 38·0
The former of these is undoubtedly the star observed in a, but the Dec. is 4′ in error as given in the W. Obs. for 1862, Oct. 20.

No. 199. Z.C. 1839. $20^h 58^m 3^s$ —27° 51′·7 10

Marked with a ? in Z.C.
Cape:—1895, Nov. 8. No star in place. There is an excessively faint star not far from place; only seen by glimpses. (F.)
Not in Cor. D.M.

No. 200. G. 29,007. $21^h 2^m 13^s$ —19° 50′·3 10

Also in Cor. D.M. = 9·8 mag., and in Cape 1860, No. 1012 = 10 mag.
Cape:—1895, Nov. 7. Mag. = 9·6 (not reddish). (F.)

No. 201. K. $21^h 9^m 50^s$ —24° 33′·1 ...

Also in Cor. D.M. = 9·5 mag.
Kapteyn:—Missing in four sweeps on two pairs of plates.
Cape:—1895, Nov. 7. Mag. = 9¾. Precedes O.A. 16,722 by 31s, and is ½′ South; place is therefore $21^h 9^m 48^s$—24° 33′·5. (F.)

No. 202. C. 3572. $21^h 10^m 11^s$ —19° 25′·1 9·2

Also in B.D. = 9·0 mag.
Kapteyn:—Certainly missing.
Cape:—1895, Nov. 7. Mag. = 9·1; no sign of colour. (F.)
On Chacornac's Carte No. 64 = 10·5 mag., which is probably too faint.

No. 203. K. $21^h 17^m 16^s$ —22° 16′·9 9·6

Also in B.D. = 9·6 mag., and 9·5 mag. in Cor. D.M.
Cape:—1895, Nov. 8. Mag. = 10. (F.)

No. 204. a 16,813. $21^h 19^m 19^s$ —30° 23′·4 9

Also in Cor. D.M. = 9·5 mag.
Kapteyn:—Certainly missing on four plates 31½°, $21^h 12^m$. The star was several times looked for in vain at Vienna (*Vid. Cat. Arg. Weiss*, p. 500). Still, however the star is certainly in Thome's D.M. *Variable?*
Cape:—Is variable.
Chandler 7685, S Microscopii. Confirmed by West, *Astr. Journ.*, No. 414.

No. 205. K. $21^h 29^m 46^s$ —19° 26′·3 M. ...

Cape:—1895, Nov. 8. Mag. = 10½. (F.)

No. 206. G. 29,862. $21^h 43^m 6^s$ —27° 10′·5 9¾

Also in Cor. D.M. = 9·5 mag.
Kapteyn:—In Cor. D.M., reference G.C. omitted.
Cape:—1895, Nov. 8. Mag. = 9·3. (F.)

No. 207. Z.C. 1630. $21^h 51^m 57^s$ —32° 8′·7 9

Kapteyn:—Certainly missing.
Misprint. R.A. should be $21^h 51^m 52^s·77$. = Z.C. 1628.

No. 208. G. 30,132. $21^h 55^m 4^s$ —29° 44′·9 10½

Also in Cor. D.M. = 9·7 mag.
Cape:—1895, Nov. 8. Mag. = 9·6, equal to Cor. D.M. 18,128. (F.)

No. 209. a 17,177. $21^h 56^m 36^s$ —28° 39′·2 8½

Also in Cor. D.M. = 9·1 mag.
Kapteyn:—S Piscis Australis. Certainly missing.
Cape:—1895, Nov. 8. Mag. = 8·5 (F.), not reddish. Varies from 8·7 mag. to 11 mag.

No. 210. Z.C. 342. $22^h 10^m 53^s$ —30° 13′·6 9

Also in Cor. D.M. = 8·5 mag.
Kapteyn:—R Piscis Australis. Certainly missing.
Cape:—1895, Nov. 8. Mag. = 9·8, a little brighter than Cor. D.M. 19,087. (F.) Varies from 6 mag. to < 11 mag.
,, Nov. 19. Mag. = 9·5 (F.)

No. 211. k 4468. $22^h 12^m 30^s$ —25° 25′·7 ...

Cape:—1896, July 4. No star.
Not in Cor. D.M.

No. 212. a. 17,613. $22^h 42^m 37^s$ —20° 56′·0 9

Prof. Weiss thinks that the star is identical with a 17,611.
Cape:—1896, July 4. Not seen.

No. 213. Z.C. 1485 $22^h 49^m 56^s$ —29° 7′·7 9

Also in Cor. D.M. = 9·3 mag.
One observation in Z.C.
Kapteyn:—On one of the plates an extremely faint speck. On the other, certainly missing.
Cape:—1896, May 26. Seen, about 9·2 mag., white.

No. 214. G. 31,207. $22^h 50^m 24^s$ —21° 0′·5 Var.

Also in W., b, and l; and in B.D. = Variable.
Kapteyn:—S Aquarii. Certainly missing.

Chandler gives redness = 4·0, mag. $\frac{7·7}{9·1}$ to < 12·5.

No. 215. G. 31,209. $22^h 50^m 33^s$ —21° 5′·2 9

Also in b; and in B.D. = 9·7 mag.
Kapteyn:—On check plate an extremely faint speck. On measuring plate certainly missing.
Cape:—1896, July 4. Seen, 9·6 mag.

No. 216. K. $23^h 10^m 24^s$ —22° 13′·0 9·7

Also in B.D. = 9·7 mag.; and 9·6 in Cor. D.M.
Cape:—1896, May 26. Seen, about 9·5 mag.

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No. 217. Z.C. 1351. $23^h 49^m 54^s$ $-32° 6' 8$ M. $9\frac{1}{2}$

Marked with a ? in Z.C. (1 obs.).
Kapteyn:—Possibly the position is in error 1^m in R.A. and 1° in Dec.; so that the correct position would be $50^m 53^s 6$ $-33° 6' 8$. In this position a single observation was made on the plates.
Cape:—1896, July 4. Not seen in position given. In the second position there is only the star 9·7 mag. given in Cor. D.M., viz., $23^h 50^m 51^s$ $-33° 7'·0$ approximately.

No. 218. *a* 18,231. $23^h 56^m 14^s$ $-20° 8'·3$ 9

Also in C; and in B.D. mag. = 9·2.
Kapteyn:—Certainly missing.
Cape:—1896, May 26. Seen in exactly position given. It is a shade brighter than the star at $23^h 56^m 17^s·4$ $-20° 5'·8$, and white, say 9·2 mag. There are two other stars, mags. 9·8 and 9·6, making a neat group of four, all in the B.D. Here the visual magnitudes differ very considerably from the photo.

No. 219. Z.C. 620. $0^h 23^m 3^s$ $-38° 36'·0$ $8\frac{1}{2}$

Also in G. 404 = $8\frac{3}{4}$ mag.; and in Cor. D.M. = 8·5 mag. No remark about colour.
Kapteyn:—Certainly missing on two plates. = T Sculptoris.
Cape:—See Observations of Variable Stars.

No. 220. Z.C. 802. $0^h 30^m 21^s$ $-49° 41'·0$ 10

Kapteyn:—Certainly missing on two plates. Probably Z.C. to be corrected by $+1^{min.}$
Cape:—1896, Dec. 30. No star there of 11·5 mag. or brighter; $+1^{min.}$ to the R.A. will give approximately the place of an 8·8 mag. star.
See also *Astr. Nach.*, No. 3539.
The Cor. D.M. gives a 9·7 and the C.P.D. 9·8 mag. star at 31^m.

No. 221. *t* 509. $1^h 28^m 1^s$ $-46° 20'·0$ ...

Kapteyn:—Identical with *t* 319 ?
Cape:—1896, Dec. 12. No star as bright as 11·5 mag. seen near here.
Not in the Cor. D.M.

No. 222. Z.C. 147. $2^h 5^m 20^s$ $-46° 49'·4$ 10

Kapteyn:—Doubtful trace on *c*. Certainly missing on two other plates.
Cape:—1896, Dec. 30. Seen, 9·5 mag. (orange), a small pair closely *s.pr.*
Is 9·6 mag. in Cor. D.M.

No. 223. G. 4491. $3^h 56^m 51^s$ $-50° 56'·0$ 9

Kapteyn:—Certainly missing on four plates. In Cordoba four observations have been made; the mag. was estimated $8\frac{3}{4}$, 10, $9\frac{1}{2}$, 9. Variable ? or correction of +20′ in δ ?
Cape:—1897, Feb. 2. No star there. Error in C.G.A., Dec. = 36′, and star identical with C.P.D. −50°, No. 523.

No. 224. Z.C. 1210. $4^h 36^m 10^s$ $-38° 39'·1$ 9

Also in Cor. D.M. = 9·6 mag.
Kapteyn:—Certainly missing on two plates.
Cape:—1897, Feb. 2. Seen, 9·6 mag. (pale orange).
See also *Astr. Nach.*, No. 3539, Cols. 169–170.

No. 225. Z.C. 243. $5^h 6^m 41^s$ $-44° 58'·2$ M. 8

The large p.m. star, so that it is not really missing from the C.P.D.

No. 226. Z.C. 688. $5^h 19^m 1^s$ $-52° 57'·8$ 9

Kapteyn:—Missing in eight sweeps on four pairs of plates. Certainly missing on two plates 50½°, $5^h 30^m$. Error in Z.C. and δ = 51′·8 ?
Cape:—1897, Feb. 4. There is no star there, but at 52° 51′·8 there is a 9·0 mag. star, orange coloured.
,, Mar. 3. No star there, a 9·0 mag. in correct R.A., but Dec. = −52° 52′.
See also *Astr. Nach.*, No. 3539.

No. 227. G. 6748. $5^h 39^m 45^s$ $-46° 30'·6$ $7\frac{1}{2}$

Also in Z.C., mag. = 8; and is Lacaille 1980.
h:—"Vivid sanguine red like a blood drop," 8 mag.
Kapteyn:—Certainly missing on two plates. *Very red* (G).
Cape:—1897, Feb. 23. Seen, 8·5 mag., red = 8 in Chandler's scale.
,, Mar. 9. Seen, 8·3 mag., very red, equal to star *n.f.* called 9th mag. in Z.C.
,, Mar. 10, 8·6.
,, ,, 14, 8·7.
,, ,, 31, 8·6 red 9.
,, April 7, 8·7 red 9.
,, ,, 13, 8·4 red 9.
,, ,, 20, 8·5.
,, ,, 26, 8·6 red 9.
,, May 4, 8·5.
,, ,, 22, 8·6 very red.
,, ,, 29, 8·6, red 9.
,, Oct. 25, 8·5, red 7.
1901, Mar. 23, 7·8, red 8·5.
In Cor. D.M. = 8·3 colour.

No. 228. G. 8476. $6^h 43^m 59^s$ $-47° 30'·1$ 9

Kapteyn:—Missing in four sweeps. Certainly missing on two plates 45½°, $6^h 55^m 23^s$. In G. only one observation.
Cape:—1897, Feb. 23. No star.
,, Mar. 9 ,,
Error of 5° in G. See Errata.

No. 229. g 369. $6^h 49^m 2^s$ $-47° 20'·6$ 9

(1 obs.)
Kapteyn:—Missing in two sweeps.
Cape:—1900, Feb. 20. No star there.
Not in Cor. D.M. There is a 9th mag. star 4′ N.

No. 230. Z.C. 2515. $6^h 49^m 57^s$ $-52° 5'·5$ 10

Marked with a ? in Z.C.
Kapteyn:—Certainly missing on two plates.
Cape:—1900, Feb. 20. No star there.

No. 231. Z.C. 1856. $7^h 26^m 24^s$ $-43° 4'·5$ 9

Marked with a ? in Z.C.
Kapteyn:—Certainly missing on two plates.
Cape:—There is a faint star (10·6 mag.) at about $7^h 26^m 22^s$–43° 5′·1. Seen on a photo plate taken on 6th Dec. 1897. No star in C.Z. position.
Not in Cor. D.M.

No. 232. Z.C. 2796. $7^h 38^m 44^s$ $-43° 54'·4$ M. 9

Kapteyn:—Certainly missing on two plates.
Cape:—1897, Jan. 31, 9·6 *very* red.
Feb. 5, 9·6 red 10.
April 3, 9·5 ,, 9.
9·7 mag. in Cor. D.M.

No. 233. Z.C. 3269. $7^h 44^m 32^s$ $-41° 57'·6$ $9\frac{1}{2}$

Not in Cor. D.M.
Kapteyn:—In original zones δ = 17′·6. Star certainly missing on two plates in both positions.
Cape:—1897, Feb. 5. A faint star, 10½ mag., very near here, and at 18′ a 10th mag., as given in Cor. D.M.
,, April 9. A star, mag. 11, at $7^h 44^m$ 35^s $-41° 17'·7$ *n.f.* the 10th mag. given in Cor. D.M.; also one same mag. at $7^h 44^m 28^s$ $-41° 57'·6$.
See Errata in C.Z. δ = 40°.
Is C.P.D. −40° No. 1783.

No. 234. g 635. $7^h 48^m 39^s$ $-38° 21'·4$ 10

Not in Cor. D.M.
Kapteyn:—Missing in *two* sweeps.
Cape:—1897, Feb. 5. No star seen.
,, April 10. No star = 10 mag. seen. Near a large cluster. The Cor. D.M. 9·2 mag. star $7^h 48^m 55^s$ −38° 23′ is either a close double or a small nebula.

No. 235. Z.C. 3880. $7^h 52^m 10^s$ $-43° 48'·6$ 8

Marked with a ? in Z.C.
Kapteyn:—Certainly missing on two plates.
Cape:—1897, Jan. 31. No star there.
Not in Cor. D.M.

No. 236 { Z.C. 4573. h m s 8 56 29 −51° 10′·4 9
Z.C. 4583. 56 32 10·4 $8\frac{1}{2}$

Kapteyn:—Following star missing in four sweeps on two pairs of plates. On two plates 50½°, $9^h 0^m$ certainly only the preceding star. Error in Z.C ?
Cape:—1897, Jan. 31. The preceding star Z.C. 4573 at $8^h 56^m 28^s·5$ only seen, mag. 8·8.
Only the preceding star is given in the Cor. D.M.
See Errata in C.Z.

No. 237. Z.C. 4629. $8^h 57^m 7^s$ $-52° 24'·2$ 10

Marked with a ? in Z.C.
Kapteyn:—Missing in four sweeps on two pairs of plates. Certainly missing on two plates 50½°, $9^h 0^m$.
Cape:—1897, Feb. 5. No star seen.
,, Mar. 4. ,, ,,

No. 238. Z.C. 160. $9^h 1^m 59^s$ $-52° 20'·1$ 10

Marked with a ? in Z.C.
Kapteyn:—Missing in four sweeps on two pairs of plates. Certainly missing on two plates 50½°, $9^h 0^m$.
Cape:—1897, Feb. 25. No star seen.

No. 239. Z.C. 1460. $9^h 18^m 15^s$ $-51° 38'·8$ $9\frac{1}{2}$

Marked with a ? in Z.C.
Kapteyn:—Missing in four sweeps on two pairs of plates. Certainly missing on two plates 50½°, $9^h 30^m$.
Cape:—1897, Feb. 27. No star seen.
Not in Cor. D.M.

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No. 240. Z.C. 342. $10^h 4^m 37^s$ —51° 36′·1 M. 9½

Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on two plates 50½°, $10^h 0^m$.
Cape :—1897, Feb. 27. No star seen. A star 3 sec. *pr.* and 2′ N. is a wide double, each star = 9½ mag.
Cordoba :—For 36′ read 34′. (Hence the above star would seem to be the following component of the double star.)

No. 241. G. 14,047. $10^h 12^m 31^s$ —49° 28′·4 7¾

Also in Z.C. = 8¼ mag.
Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on two plates. Star *crimson.* (G.)
Cape :—1897, Feb. 13. Seen, about 8·0 mag., red = 8 on Chandler's scale.
,, Mar. 15. Seen, about 8·0 mag., red = 8·5 on Chandler's scale.
In Cor. D.M. = 8·6 colour.

No. 242. g 1261. $10^h 21^m 39^s$ —40° 39′·5 8

Not in Cor. D.M.
Kapteyn :—Missing in two sweeps.
Cape :—1897, Feb. 27. No star there.

No. 243. Z.C. 4349. $10^h 59^m 48^s$ —51° 35′·7 9

Kapteyn :—Certainly missing on two plates. The assumption of an error of —7′ in δ makes the star identical with Z.C. 4348.
Misprint :—For 51° read 50°. Is C.P.D. —50°, 3936.

No. 244. Z.C. 1142. $12^h 18^m 16^s$ —47° 35′·9 9½

Kapteyn :—On check plate (No. 2789) very doubtful trace of a star. On two other plates certainly missing.
Cape :—1897, Mar. 15. Seen, 9·5 mag., red.
In Cor. D.M. = 9·9 mag. ; no mention of colour.

No. 245.

	h	m	s	°	′	
Z.C. 2286.	12	38	19	—46	15·0	8½
Z.C. 2289.		38	22		15·0	7½

Kapteyn :—Following star missing in four sweeps on two pairs of plates. On *c.* and *m.* there is certainly only the preceding star. Error in Z.C. ?
Cape :—1897, Mar. 15. Only one star seen. In the C.G.A. the preceding star only is given.
Misprint :—Z.C. 2289 for $22^s·11$ read $19^s·09$ and equal to Z.C. 2286.

No. 246. Z.C. 2608. $13^h 42^m 47^s$ —47° 43′·6 9½

Marked with a ? in Z.C.
Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on two plates 45½°, $13^h 50^m 46^s$.
Cape :—1897, Mar. 25. No star there.
Not in Cor. D.M.

No. 247. Z.C. 2619. $13^h 42^m 59^s$ —41° 50′·8 9½

Marked with a ? in Z.C.
Not in Cor. D.M.
Kapteyn :—Missing in three sweeps.
Cape :—1897, Mar. 25. No star there.

No. 248. Z.C. 2862. $13^h 46^m 40^s$ —47° 32′·6 M. 9½

Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on two plates 45½°, $13^h 50^m 46^s$. Probably error in Z.C. and star identical with Z.C. 2863, $46^m 40^s$ —47° 28′·6.
Cape :—1897, Mar. 25. No star.
Misprint :—For 32′ read 28′.

No. 249. Z.C. 3550. $13^h 57^m 56^s$ —42° 12′·3 9½

Marked with a ? in Z.C.
Kapteyn :—Missing in three sweeps on one pair of plates.
Cape :—1897, Mar. 25. No star there.
Not in Cor. D.M.

No. 250.

	h	m	s	°	′	
Z.C. 87.	14	1	20	—42	23·4	9½
Z.C. 89.		1	21		23·6	9½

Following star marked with a ? in Z.C.
The preceding star only occurs in Cor. D.M.
Kapteyn :—The following star is missing in three sweeps on one pair of plates. Its image cannot be hidden by the image of the preceding star, the mag. of which on the plates is only 10·5.
Cape :—1897, April 2. Only one star here 9·4 mag., orange. R.A. $14^h 1^m 20^s$ —42° 23′·5 approximately.
See Errata in C.Z.
The star in C.P.D. mag. 9·4 at $14^h 1^m 8^s$ —42° 29′ is double, 1′ apart, 9·4 and 9·8 mag.

No. 251. Z.C. 294. $14^h 4^m 33^s$ —48° 42′·0 9½

Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on two plates. There is a star in this declination at $\alpha = 4^m 38^s$.
Cape :—1897, April 2. No star seen. There is a 9·7 mag. star at $14^h 4^m 38^s$ —48° 42′.
The Z.C. star is not in Cor. D.M.
See Errata in C.Z.

No. 252. Z.C. 877. $14^h 13^m 42^s$ —49° 23′·4 10

Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on two plates.
Cape :—1897, April 2. Seen 9·6 mag. in approximate position, R.A. perhaps 3 sec. less.
This is evidently = C.P.D. —49° 6916, $14^h 13^m 38^s·8$ —49° 24′·3 mag. 9·1.
1900, Feb. 27. No star in position given in C.Z.
In Cor. D.M. the C.P.D. star is marked Z.C.
See Errata in C.Z.

No. 253. Z.C. 897. $14^h 14^m 5^s$ —49° 16′·5 8½

Also in G. 19416. = 8½ mag.
Kapteyn :— = τ Lupi. Missing in four sweeps on two pairs of plates. Perhaps doubtful traces on *m.* and *c.* In the original zones of Cordoba the star is noted *red.*
See under Variable Stars.

No. 254. Z.C. 914. $14^h 14^m 26^s$ —42° 56′·3 9½

Kapteyn :—Certainly missing on two plates in this position. There is a star 5^s following in C.P.D.
Not in Cor. D.M., but the latter has the star 5^s following mag. 9·8.
See, however, Errata in C.Z. δ = 49′.

No. 255. Z.C. 1061. $14^h 16^m 35^s$ —46° 0′·1 M. 10

Marked with a ? in Z.C.
Kapteyn :—Missing in five sweeps on two pairs of plates.
Cape :—1897, April 2. No star there.
The Cor. D.M. has 10^m, $14^h 16^m 40^s·5$ —46° 0′·9.

No. 256. G. 19745. $14^h 27^m 52^s$ —42° 49′·1 8½

Kapteyn :—Missing in five sweeps on two pairs of plates. On *m.* and *c.* at best extremely faint traces. Star orange. (G.)
Cape :—1897, April 2. Seen, 8·7 mag., orange-red, = 7·5 on Chandler's scale.
h :—9 mag., ruby coloured.
Cor. D.M. :—8·3 colour.

No. 257. Z.C. 3548. $14^h 55^m 49^s$ —47° 23′·4 9½

Marked with a ? in Z.C.
Kapteyn :—Certainly missing on two plates.
Cape :—1897, April 2. No star there.
Not in Cor. D.M.

No. 258. Z.C. 3709. $14^h 58^m 8^s$ —40° 59′·0 9

Not in Cor D.M.
One observation in Z.C.
Kapteyn :—Certainly missing on two plates.
Cape :—1897, April 2. No star seen.
Also "not found" at Cordoba, see *Astr. Nach.* No. 3227.

No. 259. G. 21089. $15^h 26^m 58^s$ —49° 5′·2 Var.

Also in S. 8466, and Lacaille.
Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on two plates 50½°, $15^h 30^m$. In Chandler's third Catalogue the star is included in the list of unconfirmed stars.
Cape :—Variable = R Normæ. Range 7·0 to 12·0.
See Variable Stars.

No. 260. Z.C. 1902. $15^h 27^m 44^s$ —46° 43′·8 9½

Marked with a ? in Z.C.
Kapteyn :—Missing in six sweeps on three pairs of plates.
Cape :—1897, April 8. No star seen here.
Not in Cor. D.M.

No. 261. Z.C. 2005. $15^h 29^m 7^s$ —51° 20′·2 9

Marked with a ? in Z.C.
Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on two plates.
Cape :—1897, April 8. No star seen here.
Not in Cor. D.M.

No. 262. Z.C. 2202. $15^h 32^m 3^s$ —45° 55′·1 9½

Kapteyn :—Certainly missing on two plates. Error in Z.C. ? If, instead of the wires III. IV., the star has been observed at wires III. IV., then it becomes identical with the (very faint) star C.P.D. —45°, 7547, $10·2^m$, $15^h 31^m 45^s·2$ —45° 55′·3.
Cape :—1897, Aug. 12. No star as bright as 10·5 in position given.
Not in Cor. D.M., the latter has a 10^m star in the C.P.D. position.
See also Errata in C.Z.

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No. 263. G. 21389 $15^h\ 40^m\ 8^s$ $-41°\ 11'{\cdot}0$ M. $10\frac{1}{4}$

Also in Cor. D.M. $-9{\cdot}7$ mag.
Kapteyn:—Very doubtful traces on *c.* and *m.*
Cape:—1897, April 26. Seen, 9·8 mag., perhaps red.
,, May 13. Seen, 9·7 ,,

No. 264. Z.C. 3443. $15^h\ 49^m\ 2^s$ $-46°\ 40'{\cdot}7$ $9\frac{1}{2}$

One observation in Z.C.
Kapteyn:—Missing in four sweeps on two pairs of plates. Certainly missing on two plates.
Cape:—1897, June 26. No star seen. There is a star closely *s.f.* $-9{\cdot}5$ mag. in C.P.D. As derived from Cat. plate 2939 (*C. du Ciel*) it is found approximately $15^h\ 49^m\ 7^s{\cdot}9$ $-46°\ 41'{\cdot}15$.
1898, Sept. 13. Re-observed. The C.P.D. position, $15^h\ 49^m\ 7^s{\cdot}3$ $-46°\ 41'{\cdot}2$, is correct. No star in Z.C. position.
The Cor. D.M. has a $9{\cdot}7^m$ star in the C.P.D. position.
See Errata in C.Z. $\alpha = 20^{sec.s}$.

No. 265. Z.C. 4184. $15^h\ 59^m\ 48^s$ $-49°\ 37'{\cdot}5$ $9\frac{1}{2}$

Marked with a ? in Z.C.
Kapteyn:—Missing in four sweeps on two pairs of plates. Certainly missing on *c.* and *m.* $50\frac{1}{2}°$, $16^h\ 0^m$.
Cape:—1896, June 30. No star seen; a 10th mag. $\frac{1}{2}'$ away.
C.P.D. $-49°$, 8955 is about 1′ *n.f.*, its position from Cat. Plate 1847 is approximately $15^h\ 59^m\ 49^s$ $-49°\ 36'{\cdot}6$, mag. $=9{\cdot}6$. This star is in Cor. D.M., mag. 9·9, and is marked "Z.C."

No. 266. Z.C. 188. $16^h\ 2^m\ 22^s$ $-49°\ 26'{\cdot}1$ $9\frac{1}{2}$

Marked with a ? in Z.C.
Kapteyn:—Missing in four sweeps on two pairs of plates. Certainly missing on *c.* and *m.* $50\frac{1}{2}°$ $16^h\ 0^m$.
Cape:—1897, June 30. No star.
Not in Cor. D.M.

No. 267. Z.C. 373. $16^h\ 4^m\ 59^s$ $-45°\ 2'{\cdot}8$ 9

Kapteyn:—Certainly missing on two plates.
Cape:—1897, May 31. Not seen.
,, June 30. ,,
Misprint:—$\alpha = 16^h\ 5^m\ 4^s{\cdot}71$ and is same star as Z.C. 380.

No. 268. Z.C. 1077. $16^h\ 15^m\ 26^s$ $-52°\ 5'{\cdot}6$ 10

Marked with a ? in Z.C.
Kapteyn:—Missing in four sweeps on two pairs of plates. Certainly missing on two plates $50\frac{1}{2}°$, $16^h\ 30^m$.
Cape:—1897, July 1. No star.

No. 269. Z.C. 1133. $16^h\ 16^m\ 15^s$ $-50°\ 49'{\cdot}2$ $9\frac{1}{2}$

Marked with a ? in Z.C.
Kapteyn:—Missing in four sweeps on two pairs of plates. Certainly missing on two plates. $50\frac{1}{2}°$, $16^h\ 30^m$.
Cape:—1897, July 1. No star.
Not in Cor. D.M.

No. 270. Z.C. 1700. $16^h\ 24^m\ 51$ $-39°\ 35'{\cdot}7$ $9\frac{1}{2}$

Not in Cor. D.M.
Marked with a ? in Z.C.
Kapteyn:—Missing in three sweeps on one pair of plates.
Cape:—1897, July 28. No star.

No. 271. Z.C. 1782. $16^h\ 25^m\ 56^s$ $-40°\ 42'{\cdot}6$ M. $9\frac{1}{2}$

Not in Cor. D.M.
Marked with a ? in Z.C.
Kapteyn:—Missing in three sweeps on one pair of plates.
Cape:—1897, July 7. No star so bright here; many stars 10·5 to 11th mag. in close neighbourhood.

No. 272. Z.C. 1927. $16^h\ 27^m\ 58^s$ $-45°\ 26'{\cdot}4$ $9\frac{1}{2}$

Kapteyn:—Certainly missing on two plates.
Cape:—1897, Aug. 13. 9·6 mag. (red). On *C. du Ciel* Plate 1733 a faint star is shewn which is very approximately in the correct position.
This star appears as 10^m in the Cor. D.M. but without the reference "Z.C."
See Errata in C.Z. $\delta = 36'$.

No. 273. Z.C. 2101. $16^h\ 30^m\ 11^s$ $-38°\ 20'{\cdot}6$ 10

Not in Cor. D.M.
Marked with a ? in Z.C.
Kapteyn:—Missing in three sweeps on one pair of plates.
Cape:—1897, Aug. 13. Invisible; under 11th mag. if there.

No. 274. Z.C. 2155. $16^h\ 30^m\ 55^s$ $-45°\ 22'{\cdot}2$ $9\frac{1}{2}$

Kapteyn:—Certainly missing on two plates.
Cape:—1897, June 1. Seen, 9·4 mag., redness = 8.
,, July 1. ,, ,, ,, = 9.
This star appears as 10^m in the Cor. D.M., but without the reference "Z.C."

No. 275. Z.C. 2768. $16^h\ 39^m\ 38^s$ $-44°\ 39'{\cdot}9$ $8\frac{1}{4}$

Kapteyn:—Certainly missing on *c.* and *m.* In Z.C. two observations, mag. $8\frac{1}{2}$ and 8.
Cape:—1897, June 1. Seen, 9·2 mag., redness = 8.
,, ,, 26. ,, 9·1 ,,
,, Aug. 13. ,, 8·8 ,, redness = 6.
,, Sept. 5. ,, 9·25 ,, ,, = 8.
,, ,, 17. ,, 9·0 ,, ,, = 8.
,, Oct. 3. ,, 8·9 ,, ,, = 8.
,, ,, 19. ,, 9·0 ,, ,, = 7·5.
,, ,, 23. ,, 9·0 ,,
1898, May 16. ,, 8·8 ,, redness = 7·5.
In Cor. D.M. = 9·3 colour, also in the list of "Suspected Variables" on p. xxvii. vol. 2 of that work: viz.:—
1894, June 22, 9·5 mag.
1895, May 28, 9·3 ,,
1897, Sept. 22, 10·0 ,, *
1898, May 11, 9·3 ,,
* Compare the Cape Observations about that date.

No. 276. Z.C. 2786. $16^h\ 39^m\ 50^s$ $-51°\ 41'{\cdot}4$ 9

Marked with a ? in Z.C.
Kapteyn:—Missing in four sweeps on two pairs of plates. Certainly missing on two plates $50\frac{1}{2}°$, $16^h\ 30^m$.
Cape:—1897, July 1. Not seen.
Not in Cor. D.M.

No. 277. Z.C. 3051. $16^h\ 43^m\ 34^s$ $-41°\ 23'{\cdot}8$ 10

Kapteyn:—Certainly missing on two plates.
Cape:—1897, July 29. Seen 9·8, about 30″ from Z.C. 3050, mag. 9·0 which is marked as double in the Cor. D.M.

No. 278. { Z.C. 3335. $16^h\ 47^m\ 1^s$ $-39°\ 12'{\cdot}59\frac{1}{2}$ M.
Z.C. 3339. 47 2 13 ·49½

The first star in Cor. D.M. = 9·0 mag., the second, not in Cor. D.M.
Kapteyn:—On *c.* and *m.* there is certainly but one star, the preceding one.
Cape:—1897, Aug. 13. In a cluster—three stars in a row going *n.f.* The first star is the only one so bright as 9·5.

No. 279. Z.C. 3456. $16^h\ 48^m\ 33^s$ $-44°\ 52'{\cdot}2$ 9

Kapteyn:—Certainly missing on four plates. In the first observation of Z.C. there is a reduction error; this observation belongs to Z.C. 3422. In the second observation, however, there is no such error.
Cape:—This star is on the following plate.
No. 597, 9·6 mag., ±
,, 1734, 9·8 ,, ±
,, 2038, 9·6 ,, ±
Visual Obs., 1897, July 27, 10·5 mag.
,, ,, ,, 28, 9·8 ,,
,, ,, ,, 29, 10·3 ,,
,, ,, Aug. 31, 10·5 ,,
,, ,, Sept. 17, 10·5 ,,
,, ,, ,, 25, 10·5 ,,
,, ,, Oct. 3, 10 ,,
,, ,, ,, 19, 10 ,,
,, ,, ,, 23, 10·5 ,,
,, 1898, May 16, 9·9 ,,
,, ,, ,, 30, 10 ,,
,, ,, June 22, 10·2 ,,
,, ,, July 20, 10·5 ,,
,, ,, Sept. 24, 10·5 ,,
,, ,, Oct. 17, 10·0 ,,
,, 1899, Apr. 23, 9·9 ,,
This is Cor. D.—44°, 11302, mag. 10, $\alpha = 16^h\ 48^m\ 35^s$, $\delta = -44°\ 51'{\cdot}1$.
The Z.C. suffers from two sets of mistakes. The first observation, as pointed out above, belongs to Z.C. 3422. The second should be $\alpha = 16^h\ 48^m\ 51^s{\cdot}72$, $\delta = -44°\ 52'\ 24''{\cdot}6$, and the star occurs in the C.P.D., mag. 9·9.

No. 280. Z.C. 3550. $16^h\ 49^m\ 57^s$ $-44°\ 12'{\cdot}2$ $9\frac{1}{2}$

Two obs. in Z.C., both $= 9\frac{1}{2}$ mag.
Kapteyn:—Certainly missing on four plates.
Cape:—1897, June 26. 9·3 mag., brighter than the two neighbouring stars which are in the C.P.D.
,, Aug. 13, 9·0 mag., redness = 8.
In Cor. D.M. = 9·4 mag.

No. 281. Z.C. 303. $17^h\ 4^m\ 33^s$ $-50°\ 18'{\cdot}6$ 9

Kapteyn:—Missing in four sweeps on two pairs of plates. Certainly missing on two plates $50\frac{1}{2}°$, $17^h\ 0^m$.
Cape:—1897, June 1. No star; two 9·5 mag. stars a few minutes of arc away.
Not in Cor. D.M. See Errata in C.Z.

No. 282. Z.C. 352. $17^h\ 5^m\ 18^s$ $-38°\ 56'{\cdot}6$ 10

Not in Cor. D.M.
Marked with a ? in Z.C.
Kapteyn:—Missing in three sweeps on one pair of plates.
Cape:—1897, June 21. A 10th mag. star at $17^h\ 5^m\ 22^s$ (1 obs.) $-38°\ 56'$.
,, Sept. 5. A 10·2 mag. star at $17^h\ 5^m\ 24^s{\cdot}2$ (3 obs.).

No. 283. Z.C. 465. $17^h\ 7^m\ 12^s$ $-39°\ 28'{\cdot}7$ $8\frac{1}{2}$

Also in Cor. D.M. = 9·0 mag.
Kapteyn:—Very doubtful traces on *c.* and *m.* No remark about colour in Thome.

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Cape :—1897, June 21. 9·1 mag., redness = 8, a coloured pair 30 sec. *p.*
,, Sept. 5. 9·0 mag., orange.
1901, ,, 20. 8·9 ,,

M.
No. 284. Z.C. 491. $17^h\ 7^m\ 30^s$ —39° 35′·6 10

Not in Cor. D.M.
Marked with a ? in Z.C.
Kapteyn :—Certainly missing on *c.* and *m.*
Cape :—1897, June 21. No star there.
,, Sept. 5. Invisible. Star near in Cor. D.M. = 9·7 mag., is 11·0.
1901, Sept. 20. No star there.

No. 285. Z.C. 1006. $17^h\ 14^m\ 38^s$—39° 26′·1 9

Also in Cor. D.M. = 9·2 mag.
Kapteyn :—Missing in four sweeps on two pairs of plates. Doubtful traces of a star on *c.* and *m.*
Cape :—1897, June 21. 9·0 mag., redness = 8.

No. 286. Z.C. 1214. $17^h\ 17^m\ 53^s$—40° 5′·6 $8\frac{3}{4}$

Also in Cor. D.M. = 9th mag.
Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on *c.* and *m.* In Z.C. two observations, mag. $8\frac{1}{2}$ and 9. No remark about colour in Thome.
Cape :—1897, June 21. 8·9 mag., very red = 8·5.

No. 287. G. 23,661. $17^h\ 21^m\ 1^s$—45° 37′·8 $10\frac{1}{2}$

Kapteyn :—Certainly missing on *c.* and *m.* In G. only one observation.
Cape :—1897, June 1. 9·8 mag.
,, Aug. 9. 9·65 ,,
In Cor. D.M. this star appears as follows :—
10^m, $17^h\ 20^m\ 58^s{\cdot}5$—45° 37′·7, G.C.

No. 288. G. 23,668. $17^h\ 21^m\ 14^s$—42° 5′·4 $9\frac{1}{2}$

Kapteyn :—Certainly missing on *c.* and *m.* In G. only one observation.
Cape :—1897, June 21. No star there.
Misprint :—for—42° read—43°. Mag. = 9·0 in C.P.D.

No. 289. Z.C. 2105. $17^h\ 30^m\ 58^s$—38° 17′·4 $8\frac{1}{2}$

Not in Cor. D.M.
Kapteyn :—Missing in six sweeps on three pairs of plates. Certainly missing on two plates 40½°, $17^h\ 20^m$.
Cape :—1897, June 21. No star there.
Error of 1° in Z.C., read 37°.

No. 290. G. 23,909. $17^h\ 31^m\ 39^s$—41° 33′·5 $7\frac{3}{4}$

8th mag. in Z.C. 2150, and 8·0 in Cor. D.M.
h :—8^m. Beautiful ruby star.
Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on *c.* and *m.* Yellow. (G.)
Cape :—1897, June 21. 8·3 mag., redness = 9.
,, Aug. 9. 8·0 ,, ,, = 9·5.

No. 291. Z.C. 72. $18^h\ 1^m\ 4^s$—40° 59′·5 $9\frac{1}{2}$

Also in Cor. D.M. = 9·3 mag.
Kapteyn :—Missing in eight sweeps on two pairs of plates. On *c.* doubtful traces. On *m.* certainly missing.
Cape :—1897, Aug. 9. Mag. 9·3, orange.

M.
No. 292. Z.C. 217. $18^h\ 3^m\ 12^s$—38° 9′·9 $9\frac{1}{2}$

Also in Cor. D.M. = 9·5 mag.
Kapteyn :—Certainly missing on two plates.
Cape :—1897, Aug. 9. Mag. 9·5.
1898, Sept. 23. ,, 9·4, red.
,, ,, 30. ,, 9·4.
1899, May 11. ,, 9·6, red.

No. 293. S. 9933. $18^h\ 6^m\ 19^s$—43° 10′·8 7

Kapteyn :—Certainly missing on two plates.
Identical with S. 9922 ?.
Cape :—It is S. 9922. (R.A. 1^m too large in S. 9933.)

No. 294. Z.C. 998. $18^h\ 15^m\ 48^s$—40° 1′·7 9

Also in Cor. D.M. = 9·5 mag.
Kapteyn :—Missing in eight sweeps on two pairs of plates. On *c.* doubtful traces, on *m.* certainly missing.
Cape :—1897, Aug. 9. Mag. 9·45.

No. 295. G. 25,124. $18^h\ 18^m\ 37^s$—38° 31′·3 $9\frac{1}{2}$

Also in Cor. D.M. = 9·7 Mag.
Kapteyn :—Missing in four sweeps on two pairs of plates. On *c.* and *m.* at best, very doubtful traces.
Cape :—1897, July 29. Mag. 9·4.
,, Aug. 9. ,, 9·4, yellow.
,, ,, 20. ,, 9·4.
1898, Sept. 23. ,, 9·4, (red).

No. 296. Z.C. 2088. $18^h\ 36^m\ 13^s$—52° 0′·4 $9\frac{1}{2}$

Kapteyn :—Missing in twelve sweeps on three pairs of plates. Certainly missing on *c.* and *m.* (50½°, $18^h\ 30^m$).
Cape :—1897, Aug. 8. Not seen.
Misprint $\alpha = 19^s{\cdot}8$ and same star as Z.C. 2095.

No. 297. G. 25,620. $18^h\ 38^m\ 5^s$—45° 33′·6 8

Kapteyn :—Certainly missing on *c.* and *m.* In G. only one observation. In the original observations mag. 7½.
Cape :—1897, Aug. 8. Not seen.
See Errata in G.

No. 298. Z.C. 2309. $18^h\ 40^m\ 38^s$—41° 3′·3 $9\frac{1}{2}$

Also in Cor. D.M. = 9·7 mag.
Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on *c.* and *m.*
Cape :—1897, July 27. Mag. 9·3, reddish.
,, ,, 28. ,, 9·4. ,,
,, Aug. 8. ,, 9·0.
(,, Sept. 5. ,, 9·0).
,, ,, 14. ,, 9·65
,, ,, 18. ,, 9·5.
Probably comparison 1897, Sept. 5 is to a wrong star.

No. 299. G. 27,556. $20^h\ 1^m\ 7^s$—44° 16′·5 $10\frac{1}{4}$

Kapteyn :—Certainly missing on *c.* and *m.* In G. two observations.
Cape :—1897, Aug. 8. Mag. 9·8.
,, ,, 16. ,, 10·0.
In Cor. D.M. = 10^m (In Cor. D.M. for "Z.C." read "G.C.")

M.
No. 300. G. 27,643. $20^h\ 4^m\ 38^s$—48° 1′·1 $9\frac{1}{2}$

Kapteyn :—Missing in eight sweeps on four pairs of plates.
In G. only one observation.
Misprint :—For $38^s{\cdot}31$ read $36^s{\cdot}31$
—48° ,, δ = —58° 1′ 15″·2.

No. 301. G. 28,010. $20^h\ 19^m\ 10^s$—52° 48′·7 $8\frac{1}{2}$

Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on *c.* and *m.* (50½°, $20^h\ 30^m$). In G. four observations in α; three in δ and two in mag. ($8\frac{1}{4}$ and $8\frac{1}{2}$).
Cape :—1897, Aug. 9 and 16. No star seen.
Misprints :—For 10^s read $10^s{\cdot}60$
—52° ,,—48°.

No. 302. Z.C. 1470. $20^h\ 44^m\ 50^s$—43° 3′·2 $8\frac{1}{2}$

Kapteyn :—Certainly missing on *c.* and *m.*
Cape :—1897, Aug. 9. No star seen.
Not in Cor. D.M.
See Errata in C.Z.

No. 313. Z.C. 112. $21^h\ 3^m\ 36^s$—51° 25′·0 $9\frac{1}{2}$

Marked with a ? in Z.C.
Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on *c.* and *m.*
Cape :—1897, Sept. 8. No star there; a star about 9th mag. is about 10 secs. *pr.* the position given.
Not in Cor. D.M.

No. 304. Z.C. 215. $21^h\ 7^m\ 10^s$—39° 16′·6 $9\frac{1}{2}$

Kapteyn :—Missing in four sweeps. In the Cordoba original Zones δ = — 39° 16′ 59″·6. In C.P.D. there is a faint star at $7^m\ 3^s$, dec. 16′·6; Thome assumes the identity of the Z.C. star with this object.
See Errata in C.Z.

No. 305. G. 29,291. $21^h\ 15^m\ 12^s$—40° 20′·3 $9\frac{3}{4}$

Also in Cor. D.M. = 9·7 mag.
Kapteyn :—Missing in four sweeps on two pairs of plates. At best extremely doubtful traces on *c.* and *m.*
Cape :—1897, Aug. 16. Mag. 9·75.
,, Sept. 8. ,, 10·0.
,, ,, 14. ,, 9·7.
Average mag. 9·8.

No. 306. Z.C. 491. $22^h\ 15^m\ 48^s$—46° 0′·7 $9\frac{1}{2}$

Kapteyn :—Missing in eight sweeps on two pairs of plates. Certainly missing on *c.* and *m.* (45½°, $22^h\ 9^m\ 13^s{\cdot}5$).
Cape :—1896, Dec. 30. Seen, 9·4 mag., too faint for colour.
Not visible on *C. du Ciel Cat.* plate.
Further observation. There are two stars close to this position, one is C.P.D. —46°, 10,399, mag. 9·8 photo, 9·5 visual, R.A. $22^h\ 15^m\ 54^s{\cdot}0$ —46° 1′·0 by difference observations from a neighbouring 7·5 mag. star. The other is mag. 9·9, and is at R.A. $22^h\ 15^m\ 50^s{\cdot}2$, —46° 2′ ±. The observation of 1896, Dec. 30, is probably the C.P.D. star.
In Cor. D.M. the star in the C.P.D. place is marked "Z.C." mag. 9·7.
See Errata in C.Z.

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No. 307. Z.C. 40. $23^h\ 1^m\ 38^s$ —52° 7′·5 M. $8\frac{1}{2}$

Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on *c.* and *m.* ($50\frac{1}{2}°$, $23^h\ 0^m$).

Cape :—1896, Dec. 30. No star there as bright as 11·0 mag.
1897, Nov. 26. No star there.
See Errata in C.Z.

No. 308. Z.C. 612. $23^h 22^m 24^s$ —38°29′·9 $9\frac{1}{2}$

Also in Cor. D.M. = 9·5 mag.

Kapteyn :—Missing in five sweeps on two pairs of plates. Certainly missing on *c.* and *m.*

Cape :—1896, Dec. 30. Seen, 9·5 mag., colour not noticeable.

No. 309. *g* 36. $0^h\ 4^m\ 22^s$ —78° 35′·8 9·5

Kapteyn :—Doubtful traces on *m.* On *c.* certainly missing.

Cape :—1899, Feb. 3. No star, but identification of field somewhat doubtful.
,, Oct. 3, 9·5 mag. in approximate position.

Washington :—Record straight, 6 wires in *a*.

Re-examination at Cape :—
1900, July 6, 9·4 mag.
,, Aug. 13, 9·6 ,, ±
,, ,, 18, 9·6 ,,
,, Sept. 1, 9·6 ,,
,, ,, 11, 9·4 ,,
,, Oct. 7, 9·6 ,,

No. 310. r. 4. $0^h\ 7^m\ 12^s$ —85° 22′·6 7

Also not found by Stone. See footnote in the *Cape* 1880 *Catalogue*.

No. 311. *g* 59. $0^h\ 7^m\ 39^s$ —66° 29′·4. 10·0

Kapteyn :—Missing in four sweeps on two pairs of plates.

Cape :—1898, Dec. 7, 9·6 mag.

No. 312. *g* 64 (2 obs.). $0^h 8^m 2^s$ —69° 19′·5. 9·8

Kapteyn :—Certainly missing on *m.* and *c.*

		mag.		
Cape :—1898, Dec.	7,	9·0	in approximate position.	
,, ,,	14,	9·2	,,	,,
,, ,,	20,	9·5	,,	,,
,, ,,	21,	9·4	,,	,,
,, ,,	30,	9·3	,,	,,
,, ,,	31,	9·25	,,	,,
1899, Jan.	7,	9·2	,,	,,
,, ,,	15,	9·5	,,	,,
,, ,,	24,	9·25	,,	,,
,, Feb.	4,	9·3	,,	,,

No. 313. *g* 98 (2 obs.). $0^h 11^m 26^s$ –84° 54′·8. 10·0

Kapteyn :—Faint traces on *m.* On *c.* certainly missing.

Cape :—1899, Mar. 4. Several stars near the position, the brightest = 9·9 mag.
1899, Mar. 15. 9·7 mag., approximate position.

No. 314. *g* 111. $0^h\ 12^m\ 15^s$ —69° 34′·4. 9·5

Kapteyn :—Certainly missing on *m.* and *c.*

Cape :—1898, Dec. 12. 9·5 mag.
1899, Jan. 15. Not seen, some 10 mag. stars following.
,, ,, 18. No star, a group of 4 stars 9·6–10 mag. follows at about 1 min.
,, ,, 24, No star there.

[First observation is evidently erroneous.

Washington :—(δ = 14′ in place of 34′), but even so not in C.P.D.

Cape :—Further observation, 1900, Nov. 2, 9·6 mag. (in corrected position).

No. 315. *g* 130 (2 obs.). $0^h\ 14^m 26^s$—70° 8′·9. M. 10

Kapteyn :—Certainly missing on *m.* and *c.*

Cape :—1898, Dec. 7, 9·6 mag.
1899, Jan. 15, 9·7 ,,
,, ,, 18, 9·7 ,,
,, ,, 24, 9·7 ,,

No. 316. *g* 131. $0^h\ 14^m\ 31^s$ —69° 49′·6. 10

Kapteyn :—Doubtful traces on *c.* On *m.* certainly missing.

Cape :—1898, Dec. 7, 9·0 mag., yellow 4.
1899, Jan. 15, 9·9 ,,
,, ,, 18, 9·9 ,,
,, ,, 24, 9·8 ,,

No. 317. *g* 133. $0^h\ 14^m\ 42^s$ —68° 5′·7. 10

Kapteyn :—Faint traces on *c.* On *m.* certainly missing.

Cape :—1898, Dec. 10, 9·7 mag.

No. 318. *g* 153. $0^h\ 15^m\ 37^s$ —68° 4′·7. 10

Kapteyn :—In this position certainly missing on *m.* and *c.* Corr. of $-2^{m\text{in}.}$ in *α*, and star identical with *g.* 124 ?

Cape :—1898, Dec. 10. No star there. A 9·8 mag. at $0^h\ 16^m\ 7^s \pm$ –68° 9′ ±.

Washington :— = *g.* 124 (1850, $0^h\ 12^m\ 25^s{\cdot}48$ —68° 12′ 58″·6).

No. 319. *g* 155. $0^h\ 15^m\ 50^s$ —81° 36′·3. 10

Kapteyn :—Certainly missing on *m.* and *c.*

Cape :—1899, Feb. 3, 9·9 mag.

No. 320. *g* 162. $0^h\ 16^m\ 26^s$ —80° 31′·9. 10

Kapteyn :—Certainly missing on *m.* and *c.* There is a star (9·2 mag.) at δ = 33″·6 in C.P.D.

Cape :—1899, Feb. 3. There is a star 9·3 mag. about 3′ *n.f.* the C.P.D. star, and is therefore about $4^s{\cdot}5$ *f.* Gilliss's position in *α*.

Washington :—δ requires —2.′ (It thus becomes the star indicated by Kapteyn.)

No. 321. *g* 211. $0^h\ 21^m\ 16^s$ —70° 6′·6. 10

Kapteyn :—Certainly missing on two pairs of plates.

Cape :—1898, Dec. 10, 10 mag. = 10·5 *g.*

No. 322. *g* 245 (2 obs.), $0^h 24^m 19^s$–85° 18′·0. 10·0

Kapteyn :—Certainly missing on plates 85°, 0^h.

Cape :—1899, Mar. 4, 9·8 mag.
,, ,, 15, 9·8 ,,

No. 323. *g* 260. $0^h\ 26^m\ 22^s$ —68° 57′·3. 10·0

Kapteyn :—Missing in eight sweeps on two pairs of plates. Perhaps extremely doubtful traces on *m.* and *c.*

Cape :—1898, Dec. 10, 10·2 mag.

No. 324. *g* 286. $0^h\ 29^m\ 16^s$ —84° 1′·3. 10

Kapteyn :—Faint traces on *m.* On *c.* certainly missing.

Cape :—1899, Mar. 4, 9·25 mag.
,, ,, 15, 9·2 ,, yellow.

No. 325. *g* 325. $0^h\ 33^m\ 45^s$ —68° 16′·3. M. 10

Kapteyn :—Certainly missing *m.* and *c.*

Cape :—1898, Dec. 10, 10 mag., at $0^h\ 34^m\ 7^s \pm$, –68° 17′·6 ±.
1899, Nov. 26, No star in position given. A 9·6 mag. at about $0^h\ 34^m\ 10^s$, –68°16′·8 ±.

No. 326. *g* 333. $0^h\ 33^m\ 49^s$ —82° 36′·7. 10

Kapteyn :—Perhaps faint traces on *m.* (85°, 0^h). On *c.*, and plates 80°, $0^h\ 0^m$ certainly missing.

Cape :—1899, Mar. 4, 9·5 mag., red, 8.
,, ,, 15, 9·6 ,,

No. 327. *g* 328. $0^h\ 34^m\ 1^s$ —72° 57′·4 9

Kapteyn :—Certainly missing on three pairs of plates. (Plates 70°, $0^h\ 45^m$; 75°, 0^h and 1^h.) Error in δ, *α* star identical with *g* 327 ?

Cape :—1898, Dec. 10. *g.* 327 only seen.
1899, Feb. 12. No star in position given.

Washington :—Another observation of *g* 327 (1850 *α*, $0^h\ 32^m\ 59^s{\cdot}26$, δ —73° 6′ 28″·6).

No. 328. *g* 342. $0^h\ 34^m\ 6^s$ —86° 4′·2 10

Kapteyn :—Certainly missing on plates, 85°, 0^h.

Cape :—1899, Mar. 4. 9·8 mag. (perhaps a little *pr.* the position given).

No. 329. *g* 347. $0^h\ 35^m\ 19^s$ —77° 40′·4 9·5

Kapteyn :—Perhaps extremely faint traces of a star on *m.* (80°, $0^h\ 0^m$). On *c.* certainly missing.

Cape :—1899, Feb. 3, 9·7 mag. = 10 *g.*
,, 12, 9·4 ,, = 9·8 *g.*
,, 22, 9·7 ,,

No. 330. *r* 22. $0^h\ 35^m\ 47^s$ —66° 9′·4 6

Kapteyn :—Error in R.A., and identical with G. 653 ? Stone thinks the identity probable. See footnote in *Cape Catalogue* for 1880.

No. 331. *g* 357. $0^h\ 36^m\ 11^s$ —76° 17′·2 8·5

Kapteyn :—Missing on *m.* and *c.*

Cape :—1898, Dec. 18. Either not seen or not identified.
1899, Feb. 22. No star.

Washington :—Error of 20^m and is = *g.* 536.

No. 332. *g* 358. $0^h\ 36^m\ 20^s$ —76° 17′·1 5

Kapteyn —Certainly missing on *m.* and *c.* There is a star in C.P.D. as follows :—
(10·2) $36^m\ 17^s{\cdot}0$ —76° 26′·9.

Cape :—Same results as for No. 331.

Washington :—Error of 20^m and is = *g* 538.

No. 333. *g* 383. $0^h\ 39^m\ 6^s$ —70° 36′·5 10

Kapteyn :—Certainly missing on *m.* and *c.*

Cape :—1899, Jan. 15. $10^m = 11^m$ *g.*

No. 334. *g* 432. $0^h\ 44^m\ 25^s$ —68° 53′·5 10

Kapteyn :—Certainly missing on *m* and *c.*

Cape :— 1899, Dec. 28. 9·9 = 10·5 *g.*

No. 335. *g* 494. $0^h\ 50^m\ 18^s$ —83° 42′·0 10

Kapteyn :—Certainly missing on plates 85°, 0^h.

Cape :—1899, Mar. 4, 9·6. There is a $9{\cdot}2^m$ at $0^h\ 49^m$ —83° 47′ ± not found in any catalogue.
,, Nov. 21, 9·55. A 9·3 mag. at $0^h\ 49\frac{1}{2}^m$ –83° 47′ ±.

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No. 336. g 487. $0^h\ 50^m\ 33^s$ $-69°\ 39'{\cdot}5$ M. 10

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1898, Dec. 13. 10 mag. = 10·5 *g.*
1899, Jan. 7. 9·6 mag. in position + 36^s $-1'{\cdot}2\pm$.
,, Dec. 6. 9·6 mag. in position given. Previous observation must be wrong.

No. 337. g 516. $0^h\ 52^m\ 0^s$ $-85°\ 29'{\cdot}6$ 10

Kapteyn :—Certainly missing on plates 85°, 0^h.
Cape :—1899, Mar. 4. 9·8 mag. in approximate position.

No. 338. g 519. $0^h\ 53^m\ 21^s$ $-75°\ 40'{\cdot}6$ 9·5

Kapteyn :—Certainly missing on *m.* and *c.*
Cape 1899, Feb. 15. 10·0 mag. near position with a 9·6 mag. about 4′ *n.f.*
Variable :—See *Harvard Circular*, No. 32, 21/6/98, Type III., Hydrogen lines bright.

No. 339. g 517. $0^h\ 53^m\ 21^s$ $-71°\ 29'{\cdot}1$ 10

Kapteyn :—Certainly missing on *m.* and *c.*
Cape 1898, Dec. 14. No star in position quoted. There are three stars 9·5–10 mag. nearer the position than the star mentioned by Kapteyn in No. 344.
1899, Jan. 30. No star.
Washington :—α 4^m too large. (Is thus = C.P.D. −71°, No. 32.)

No. 340. r 37. $0^h\ 53^m\ 51^s$ $-48°\ 37'{\cdot}0$ 7

Kapteyn :—According to Stone "cannot be found."

No. 341. g 534 (3 obs.). $0^h\ 54^m\ 55^s$ $-84°\ 48'{\cdot}8$ 9·8.

Kapteyn :—Certainly missing on plates, 85°, 0^h.
Cape :—1899, Mar. 4. 9·8 (red).

No. 342. g 549 (2 obs.). $0^h\ 57^m\ 5^s$ $-69°\ 18'{\cdot}4$ 10

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1898, Dec. 13. 10 mag.
,, 29. 10 ,

No. 343. g 550. $0^h\ 57^m\ 11^s$ $-69°\ 49'{\cdot}4$ 10

Kapteyn :—Certainly missing on plates 70°, $0^h\ 45^m$.
Cape :—1898, Dec. 29. 10·5 mag.

No. 344. g 557. $0^h\ 58^m\ 30^s$ $-71°\ 32'{\cdot}6$ 10

Kapteyn :—In this position certainly missing on *m.* and *c.* There is a bright star (8·6) in C.P.D. 5^m preceding.
Cape :—1898, Dec 13. No star there.
,, ,, 14. No star.
1899, Jan. 30. No star, two faint stars near.
Washington :—α 5^m too large.

No. 345. g 591. $1^h\ 2^m\ 58^s$ $-68°\ 46'{\cdot}1$ 10

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1898, Dec. 29. 9·9 mag.
1899, Jan. 7. 9·7 ,, = 10 *g.*
,, Feb. 4. 9·7 ,,

No. 346. g 594. $1^h\ 3^m\ 23^s$ $-70°\ 57'{\cdot}6$ M. 10

Kapteyn :—Missing in six sweeps on two pairs of plates. Certainly missing on *m.* and *c.*
Cape :—1899, Jan. 19. No star.
,, ,, 24. 9·8 mag.
,, ,, 30. No star in exact position, there is 10^m (seen also on 24/1/99) at $1^h\ 3^m\ 11^s$ $-70°\ 57'{\cdot}7\pm$ but it is probably not *g*'s star as it is fainter than his 10^m.
Washington :—Same star as *g.* 602.

No. 347. g 675. $1^h\ 9^m\ 54^s$ $-86°\ 29'{\cdot}1$ 10

Kapteyn :—Certainly missing on plates 85°, 2^h. Also missing in three sweeps on plates 85°, 0^h.
Cape :—1899, Mar. 4. 9·8 mag.

No. 348. g 696 (2 obs.). $1^h\ 13^m\ 18^s$ $-85°\ 4'{\cdot}5$ 10

Kapteyn :—Certainly missing on plates 85°, 2^h. Also missing in three sweeps on plates 85°, 0^h.
Cape :—1899, Mar. 4. 9·7 mag. in approximate position.

No. 349. g 689 (2 obs.). $1^h\ 13^m\ 52^s$ $-66°\ 50'{\cdot}6$ 9·2

Cape :—1898, Dec. 14. 9·5 mag.
,, ,, 31. 9·5 ,,
1899, Jan. 7. 9·6 ,,
,, Feb. 4. 9·6 ,, red.

No. 350. g 709. $1^h\ 14^m\ 12^s$ $-85°\ 32'{\cdot}5$ 10

Kapteyn :—Certainly missing on plates 85°, 2^h. Missing also in three sweeps on plates 85°, 0^h.
Cape :—1899, Mar. 4. 9·7 mag. in approximate position.

No. 351. g 700. $1^h\ 14^m\ 56^s$ $-75°\ 34'{\cdot}2$ 9·5

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1898, Dec. 18. [8·9] mag. Identification doubtful.*
1899, Feb. 15. No star.
,, ,, 22. [No star].
,, ,, 26. No star.
* Added at time of first observation.
Washington :—δ requires −3′ (Is thus = C.P.D. −75° No. 79).

No. 352. g 710. $1^h\ 16^m\ 14^s$ $-69°\ 46'{\cdot}4$ 9·5

Kapteyn :—Missing in four sweeps on two pairs of plates.
Cape :—1898, Dec. 18. No star there.
1899, Feb. 4. 11^m near position.
,, ,, 12. Invisible.
,, ,, 18. [11·5].
,, ,, 26. Invisible.
,, ,, 27. ,,
,, Mar. 4. ,,
1900, Nov. 2. No star.
Washington :— = *g* 2423, 4^h error in α.

No. 353. g 747. $1^h\ 19^m\ 19^s$ $-66°\ 6'{\cdot}1$ 10

Cape :—1898, Dec. 18. 9·5 mag.
,, ,, 31. 9·4 ,,
1899, Jan. 24. 9·6 ,,

No. 354. g 754. $1^h\ 19^m\ 47^s$ $-68°\ 56'{\cdot}6$ M. 11

Kapteyn :—There is a faint star in C.P.D. at δ = 52″·2. A correction of 4′ 15″ (*vide Gilliss's Introd.* lvii.) seems therefore not improbable.
Cape :—1898, Dec. 20. No star. C.P.D. star seen.
Washington :—Record straight, seven wires in α.

No. 355. g 797. $1^h\ 23^m\ 45^s$ $-85°\ 10'{\cdot}8$ 10

Kapteyn :—Extremely doubtful traces on α. 85°, 2^h. On *m.* certainly missing.
Cape :—1899, Mar. 4. 9·7 mag.

No. 356. Z.C. 669. $1^h\ 25^m\ 32^s$ $-64°\ 29'{\cdot}1$ 10

Kapteyn :—Extremely doubtful traces of a star on the plates.
Cape :—1898, Mar. 3. 9·75 mag., somewhat fainter than star 5′ S. *pr.*

No. 357. g 806. $1^h\ 25^m\ 57^s$ $-82°\ 41'{\cdot}3$ 11·0

Kapteyn :—Certainly missing on two pairs of plates (85°, 2^h and 80°, $1^h\ 30^m$).
Cape :—1899, Mar. 4. 9·8 mag.

No. 358. g 865 (3 obs.). $1^h\ 32^m\ 28^s$ $-82°\ 30'{\cdot}1$ 10·2

Kapteyn :—Certainly missing on two pairs of plates (85°, 2^h and $8o^h$, $1^h\ 30^m$).
Cape :—1899, Mar. 4. 9·7 mag.

No. 359. g 880. $1^h\ 32^m\ 28^s$ $-85°\ 2'{\cdot}7$ 10·2

Kapteyn :—Extremely doubtful traces on α. On *m.* certainly missing.
Cape :—1899, Mar. 7. 9·7 mag.

No. 360. g 878. $1^h\ 34^m\ 23^s$ $-66°\ 55'{\cdot}6$ 9·5

Cape :—1898, Dec. 18. 9·2 mag. in approx. position.
,, ,, 20. 9·5 mag.

No. 361. g 879. $1^h\ 34^m\ 25^s$ $-66°\ 38'{\cdot}4$ 9·5

Cape ;—1898, Dec. 18. 9·2 mag. in approx. position.
,, ,, 20. 9·6 mag.

No. 362. g 903 (3 obs.). $1^h\ 35^m\ 11^s$ $-85°\ 3'{\cdot}7$ 10·2

Kapteyn :—Certainly missing on plates 85°, 2^h.
Cape :—1899, Mar, 7. 9·6 mag.

No. 363. g 921 (2 obs.). $1^h\ 36^m\ 58^s$ $-85°\ 15'{\cdot}2$ 10

Kapteyn :—Certainly missing on plates 85°, 2^h.
Cape :—1899, Mar. 7. 9·8 mag.

No. 364. g 914. $1^h\ 38^m\ 19^s$ $-66°\ 48'{\cdot}7$ 10

Kapteyn :—Missing in four sweeps on two pairs of plates.
Cape :—1898, Dec. 18. 9·2 mag.
,, ,, 20. 9·7 ,,

No. 365. g 955 (3 obs.). $1^h\ 40^m\ 51^s$ $-84°\ 55'{\cdot}2$ 10·2

Kapteyn :—Certainly missing on plates 85°, 2^h.
Cape :—1899, Mar. 7. 9·5 mag.

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No. 366. g 52. $1^h\ 41^m\ 21^s$ —85° 24′·0 M. 5

Kapteyn:—Star probably 1 wire interval in R.A. in error, (about 17 secs. δ is 85° 31′ = $3^m\ 37^s$) and identical with g. 54.

No. 367. g 1015. $1^h\ 48^m\ 12^s$ —82° 23′·6 10·5

Kapteyn:—Certainly missing on plates 85° 2^h, and m. of 80°, $1^h\ 30^m$. On c. (80°, $1^h\ 30^m$) doubtful traces.
Cape:—1899, Mar. 7. 9·0 mag. yellow.
Same mag. as g. 1001 which g. also calls 10·5.

No. 368. r 79. $1^h\ 51^m\ 35^s$ —52° 14′·0 7

Kapteyn:—According to Stone, "no star visible of the seventh magnitude, near the assigned position."

No. 369. g 1045. $1^h\ 51^m\ 38^s$ —76° 8′·7 9

Kapteyn:—Certainly missing on m., c., and 3rd plate.
Cape:—1899, Dec. 18. Not seen.
,, ,, 24. No star.
Washington:—Same star as g 1044.
δ = 79° not 76°.

No. 370. g 1057 (2obs.). $1^h\ 53^m\ 5^s$ —67° 22′·7 10

Kapteyn:—Missing in six sweeps on three pairs of plates.
Cape:—1898, Dec. 18. 9·2 mag. (orange).
,, ,, 20. 9·3 ,, ,,
,, ,, 31. 9·4 ,, ,,
1899, Jan. 24. 9·4 ,, ,,

No. 371. g 1087. $1^h\ 56^m\ 3^s$ —70° 56′·3 11

Kapteyn:—Missing in six sweeps on three pairs of plates.
Cape:—1898, Dec. 19. 10 mag. = 11 g in approximate position.
1899, Feb. 12. 10·2 mag. = 12 g.

No. 372. g 1109. $1^h\ 58^m\ 5^s$ —66° 46′·4 10

Cape:—1898, Dec. 19. 10 mag.

No. 373. g 1118. $1^h\ 58^m\ 16^s$ —78° 56′·6 11

Kapteyn:—A faint image on c. On m. certainly missing.
Cape:—1899, Feb. 3. No star in exact position, there are 3 stars near, all about 9·2 to 9·5. The nearest is about 40s f and a little S. of the position given.
,, Feb. 12. 9·2 mag. in approximate position.
,, Dec. 4. 9·2 mag. in approximate position.

No. 374. g 1174. $1^h\ 59^m\ 15^s$ —86° 59′·2 10

Kapteyn:—Certainly missing on plates 85°, 2^h.
Cape:—1899, Mar. 7. 9·5 mag.

No. 375. g 1135. $1^h\ 59^m\ 34^s$ —78° 53′·9 11

Kapteyn:—Certainly missing on plates 80°, $1^h\ 30^m$.
Cape:—1899, Dec. 4. 9·1 mag.
Nos. 373, 375 and 377 are all about the same magnitude and are undoubtedly g's stars, but it is difficult to say if they are exactly in g's position.

No 376. g 1134. $2^h\ 0^m\ 4^s$ —69° 11′·9 M. 10

Kapteyn:—Missing in four sweeps on two pairs of plates.
Cape:—1898, Dec. 19. 10 mag. = 11 g near position given.

No. 377. g 1144. $2^h\ 0^m\ 25^s$ —78° 47′·5 11

Kapteyn:—Certainly missing on two pairs of plates. (80°, $1^h\ 30^m$, and 80°, $3^h\ 0^m$).
Cape:—1899, Feb. 3. 9·3 mag.
,, 12. 9·1 ,, in approximate position.
,, Dec. 4. 9·2 mag. in approximate position.

No. 378. g 1149. $2^h\ 1^m\ 20^s$ —74° 58′·8 10

Kapteyn:—In this position certainly missing. Error of 4′ 15″ (wrong decl. wire) and star identical with g 1148? Divergencies: 0^s 31 and 4′ 9″·6.
Cape:—1898, Dec. 20. No star there.
Washington:—Wrong in δ, is same star as g 1148.

No. 379. g 1150. $2^h\ 1^m\ 47^s$ —71° 16′·6 10

Kapteyn:—There is a star (10·2) in C.P.D. at δ = 8′·2. An error of 8′·5 in δ seems probable (Comp. *Gilliss's. Introd.*, lvii.)
Cape:—1898, Dec. 19. There is a 10^m star at about $2^h\ 2^m\ 27^s$ —71° 15′·5. C.P.D. star also seen, mag. 9·7.
Washington confirms Kapteyn's suspicion, see Errata in Gilliss's *Polar Zone Cat.*

No. 380. g 1176. $2^h\ 2^m\ 13^s$ —83° 46′·4 11

Kapteyn:—Certainly missing on plates 85°, 2^h.
Cape:—1899, Mar. 7. 8·9 identity very precarious mag.
,, ,, 12. 9·5
,, ,, 17. 9·7
1900, Jan. 6. 9·4
,, Mar. 5. 9·5
1902, Apr. 13. 9·6

No. 381. g 1185. $2^h\ 3^m\ 20^s$ —83° 34′·1 10

Kapteyn:—Certainly missing on plates 85°, 2^h.
Cape:—1899, Mar. 7. 9·5 identity very precarious mag.
,, ,, 12. 9·1
,, ,, 17. 9·5
1900, Jan. 6. 9·0
,, Mar. 5. 9·2
1902, Apr. 13. 9·2

No. 382. g 1206. $2^h\ 3^m\ 25^s$ —86° 57′·4 10

Kapteyn:—Certainly missing on plates 85°, 2^h.
Cape:—1899, Mar. 7. 9·4 mag., ill defined.

No. 383. g 1193. $2^h\ 3^m\ 37^s$ —84° 48′·6 10

Kapteyn:—Perhaps extremely faint traces on plates 85°, 2^h.
Cape:—1899, Mar. 29. 9·4 mag. Photo Plate 5311.
,, Sept. 6. 9·5 ,,

No. 384. g 1221. $2^h\ 9^m\ 29^s$ —66° 22′·9 10

Cape:—1898, Dec. 19. 9·7 mag.

No. 385. g 1223. $2^h\ 9^m\ 38^s$ —66° 25′·9 9·5

Cape:—1898, Dec. 19. 9·4 mag. with *Comes* = 11^m at 11″.

No. 386. g 1265. $2^h\ 10^m\ 47^s$ —84° 53′·9 M. 10

Kapteyn:—Certainly missing on plates 85°, 2^h.
Cape:—1899, Mar. 29. No star on Photo Plate No. 5311.
1899, Sept. 6. No star.
Washington:—δ needs —30′. But even so the C.P.D. has no star. Visual examination on 1900 Apr. 30, shows a 9·8 mag. there.

No. 387. g 1289. $2^h\ 10^m\ 48^s$ —86° 59′·2 10

Kapteyn:—Certainly missing on plates 85°, 2^h.
Cape:—1899, Mar. 7. 9·6 mag.

No. 388. g 1264. $2^h\ 10^m\ 49^s$ —84° 19′·7 10

Cape:—1899, Mar. 12. 9·4 mag. (No known stars in field.)

No. 389. g 1251. $2^h\ 11^m\ 0^s$ —79° 3′·5 10·5

Kapteyn:—On c. ($3^h\ 0^m$) doubtful traces; on m. and on plates 80°, $1^h\ 30^m$ certainly missing. Also missing on two rejected plates 80°, $3^h\ 0^m$.
Cape:—1899, Feb. 3. 9·4 mag.
,, ,, 12. 9·2 ,, in approx. position.
,, Dec. 4. 9·2 ,, ,, ,, ,,

No. 390. G. 2349. $2^h\ 12^m\ 42^s$ —64° 20′·6 9½
Z.C. 342. 9½

Kapteyn:—Extremely doubtful traces on the plates.
Cape:—1898, Mar. 3. 9·6 mag.

No. 391. g 1298 (3 obs.). $2^h\ 13^m\ 43^s$ —85° 40′·8 10

Kapteyn:—Certainly missing on plates 85°, 2^h.
Cape—1899, Mar. 12. 9·8 mag.

No. 392. G. 2371. $2^h\ 13^m\ 54^s$ —63° 59′·6 9½
Z.C. 363. 9½

Kapteyn:—Certainly missing on m. and c.
Cape:—1898, Mar. 3. 9·6 mag.

No. 393. g 1294 (2obs.). $2^h\ 14^m\ 6^s$ —84° 14′·0 9·8

Kapteyn—Certainly missing on plates 85° 2^h.
Cape:—1899, Mar. 12. 9·3 mag. (No known stars in field).

No. 394. g 1291. $2^h\ 14^m\ 41^s$ —81° 17′·7 10

Kapteyn:—Doubtful traces on c. Certainly missing on m. Also missing on the two rejected plates 80°, $3^h\ 0^m$.
Cape:—1899, Feb. 3, 9·5 mag.

No. 395. g 1285. $2^h\ 14^m\ 54^s$ —77° 54′·9 10

Kapteyn:—Certainly missing on plates 80°, $1^h\ 30^m$. On c. of $3^h\ 0^m$ doubtful traces; on m. certainly missing. Also missing on two rejected plates of 80°, $3^h\ 0^m$.
Cape:—1899, Feb. 12. 9·5 mag. = 10 g in approximate position.

No. 396. g 1300 (2 obs.). $2^h\ 17^m\ 23^s$ —66° 57′·0 9·2

Cape:—1898, Dec. 19, 9·0 mag.
1899, Feb. 12, 9·0 ,,

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No. 397. g 1336. $2^h\ 18^m\ 46^s$ —84° 2′·5 M. 9·5

Kapteyn :—Extremely doubtful traces on c. On m. certainly missing.
Cape :—1899, Mar. 2, 9·6 mag.
(No known stars in field.)

No. 398. g 1390. $2^h\ 22^m\ 59^s$ —83° 58′·2 10

Kapteyn :—Certainly missing on plates 85°, 2^h.
Cape :—1899, Mar. 12, 9·5 mag.

No. 399. g 1437 (3 obs.). $2^h\ 25^m\ 43^s$ —86° 11′·7 10

Kapteyn :—Certainly missing on plates 85°, 2^h.
Cape :—1899, Mar. 12, 9·7 mag.

No. 400. g 1435 (2 obs.). $2^h\ 27^m\ 11^s$ —84° 14′·3 10

Kapteyn :—Certainly missing on plates 85°, 2^h.
Cape :—1899, Mar. 12, 9·6 mag.

No. 401. g 1482 (3 obs.). $2^h\ 30^m\ 15^s$ —86° 25′·6 10

Kapteyn :—Extremely doubtful traces on c. (85°, 2^h). On m. certainly missing.
Cape :—1899, Mar. 12, 9·6 mag.

No. 402. g 1442. $2^h\ 30^m\ 55^s$ —66° 29′·4 10

Cape :—1898, Dec. 19, 9·5 mag.

Nos. 403. g 1472. $2^h\ 31^m\ 50^s$ —82° 28′·1 9·0
and 404. g 1498. $2^h\ 34^m\ 48^s$ —82° 28′·2 9·0

Kapteyn :—There is a star (9·2 mag.) at $2^h\ 35^m\ 48^s$ —82° 28″·0.
Probably Gilliss's stars in error resp. by $4^{min.}$ and $1^{min.}$ in R.A. The identity of the two stars is already assumed in *Gilliss's Catal.* (footnote). In the position of *Gilliss's Catal.* certainly missing on plates 85°, 2^h.
Cape :—1899, Mar. 12. There is no star in either of the positions given by g.
Washington :—g 1498 requires 1^m added to α.

No. 405. g 1459. $2^h\ 32^m\ 24^s$ —70° 39′·2 10

Kapteyn :—Correction $+4^{min}$ in R.A. and star identical with g 1497 ? Divergencies : $4^m\ 0^s·3$ and 5″.
Cape :—1898, Dec. 19. Not seen.
1899, Jan. 15. ,, ,,
Washington :—Is same as g 1497.

No. 406. Z.C. 892. $2^h\ 32^m\ 51^s$ —63° 7′·6 9

Kapteyn :—Certainly missing on m. and c.
Cape :—1898, Mar. 3. No star as bright as 10·5 mag. in position given.
,, Mar. 31. No star there.
1902, ,, 13. ,, ,,

No. 407. g 1494. $2^h\ 33^m\ 25^s$ —84° 14′·0 10

Kapteyn :—Certainly missing on plates 85°, 2^h.
Cape :—1899, Mar. 12. There is a 9·5 mag. about there, no reference stars within $40^{min.}$ of α.

No. 408. g 1486. $2^h\ 34^m\ 21^s$ —78° 55′·0 9·0

Kapteyn :—Certainly missing on m. and c. Also missing on two rejected plates. Correction $-1^{min.}$ in R.A., and star identical with g 1478 ?
Cape :—1899, Feb. 12. No star in position given.
Washington :—Same star as g 1478.

No. 409. G. 3143. $2^h\ 50^m\ 7^s$ —67° 52′·1 M. 11

Kapteyn :—Certainly missing on m. and c.
Cape :—1898, Dec. 21. 10 mag.

No. 410. G. 3167. $2^h\ 51^m\ 11^s$ —64° 51′·1 9·5

Kapteyn :—G. has a duplex here. The distance of the component being $1^s·4$ and 10″·0, the duplicity ought to have been visible on the plates. It certainly is not visible however.
Cape :—1898, May 4. Double 9 and 9·5 mag. 140°± 7″.
Is h 3542. 1838·0 142°·7. 12″±. 10 and 10·5 mag.

No. 411. g 1649 (2 obs.). $2^h\ 54^m\ 21^s$ —66° 41′·5 10

Cape :—1898, Dec. 20, 9·45 mag.
1899, Jan. 24, 9·5 ,,
,, Feb. 12, 9·5 ,,

No. 412. g 1696. $2^h\ 58^m\ 12^s$ —74° 3′·8 10

Kapteyn :—Extremely doubtful traces on the plates.
Cape :—1899, Dec. 20. 9·8 mag. = 10·3 g.

No. 413. g 1749. $3^h\ 0^m\ 41^s$ —84° 27′·4 10

Kapteyn :—Certainly missing on plates 85°, 4^h.
Cape :—1899, Mar. 11. 9·6 mag.

No. 414. g 1879. $3^h\ 1^m\ 34^s$ —88° 22′·8 9·5

Kapteyn :—In this position missing in four sweeps on polar plate. Star identical with g 1880 ? In footnote of Catalogue the identity is deemed probable.
Washington :—Evidently same star as g 1880, but source of error cannot be found.

No. 415. g 1754. $3^h\ 3^m\ 17^s$ —79° 37′·1 10

Kapteyn :—In this position certainly missing on m. and c. Missing also on rejected plates, 80°, $3^h\ 0^m$. There is a star (9·3 mag.) following 20 sec. in C.P.D.
Cape :—1899, Feb. 12. The C.P.D. star = 9·3 mag. seen, there is no star in position given, but there are three stars 9·0 to 9·5 mag. within 5′ distance.
Washington :— α requires $+20^s$.

No. 416. Z.C. 262. $3^h\ 8^m\ 18^s$ —65° 27′·8 9

Kapteyn :—Certainly missing on m. and c., and third plate.
Cape :—1898, Mar. 4. No star in position given, a 9·0 mag. at about $3^h\ 7^m\ 15^s$ —65° 27′ = 9·6 mag. in C.P.D.
1902, Mar. 13. No star in position given.

No. 417. g 1895. $3^h\ 9^m\ 28^s$ —87° 22′·2 10

Kapteyn :—Missing in four sweeps on polar plate.
Cape :—1899, Mar. 11. No star.
,, Apr 27. ,,
1902, Mar. 14. No star = 10^m there.
Washington :—Record straight, one wire in α.

No. 418. g 1828. $3^h\ 9^m\ 40^s$ —81° 0′·2 9·5

Kapteyn :—Certainly missing on m. and c. Also missing on two rejected plates 80°, $3^h\ 0^m$. Correction in R.A., and star identical with g 1839 ?
Cape :—1899, Feb. 12. Only one star here which will be g 1839.
Washington :— $-g$ 1839.

No. 419. g 1847. $3^h\ 11^m\ 12^s$ —81° 35′·0 M. 10

Kapteyn :—Perhaps doubtful traces on c. Certainly missing on m. Also missing on two rejected plates, 80°, $3^h\ 0^m$.
Cape :—1899, Feb. 14, 9·7 mag.
,, ,, 17, 9·6 ,
,, ,, 22, 9·5 ,,
,, ,, 27, 9·6 ,

No. 420. Z.C. 350. $3^h\ 11^m\ 22^s$ —76° 27′·2 9

Kapteyn :—Certainly missing on m. and c.
Cape :—1898, Dec. 22. No star there ; a 10^m about 8′ S., or it might be g 1837, the Z.C. place being 20′ too large in δ.
Cordoba :—No error of computation found.
Cape :—Again looked for, 1902, April 13. No star.

No. 421. g 1861. $3^h\ 13^m\ 46^s$ —66° 37′·9 10

Cape :—1898, Dec. 21, 9·8 mag.

No. 422. g 1900. $3^h\ 18^m\ 14^s$—69° 44′·0 12

Cape :—1898, Dec. 28, 10·2 mag.
1899, Jan. 24, 10·3 ,,
,, Feb. 12, 10·1 ,,

No. 423. g 1901. $3^h\ 18^m\ 26^s$ —66° 44′·1 10

Cape :—1898, Dec. 21, 9·7 mag.

No. 424. g 1907. $3^h\ 18^m\ 30^s$ —69° 43′·5 10

Cape :—1898, Dec. 28, 10 mag.
1899, Jan. 24, 10 ,,
,, Feb. 12, 10 ,,

No. 425. g 1926. $3^h\ 18^m\ 38^s$ —79° 29′·8 10

Kapteyn :—Certainly missing on m. and c. Missing also on two rejected plates 80°, $3^h\ 0^m$.
Cape :—1899, Feb. 14. No star ; there is a 9·5mag. about $3^h\ 17^m$ —79° 24′.
Washington :—δ requires +5′ 38″·7. (This is probably the star seen 14/2/99 and is C.P.D. —79° No. 95, mag. 9·8.)

No. 426. g 1942. $3^h\ 21^m\ 22^s$ —75° 31′·0 10

Kapteyn :—Extremely doubtful traces on the plates.
Cape :—1898, Dec. 22, 9·7 mag. = g 10.

No. 427. g 1943. $3^h\ 21^m\ 51^s$ —71° 26′·8 10

Kapteyn :—Missing in six sweeps on three pairs of plates.
Cape :—1898, Dec. 28. 10 mag. in approximate position.

No. 428. g 2034. $3^h\ 32^m\ 12^s$ —66° 45′·3 10

Cape :—1898, Dec. 21, 9·8 mag. = 10 g.

No. 429. g 2040. $3^h\ 32^m\ 24^s$ —70° 56′·4 10

Kapteyn :—Correction of + $5^{min.}$ in R.A. and star identical with g 2086 ? Divergencies : $5^m\ 0^s·4$ and 1″·7.
Cape :—1899, Dec. 28. No star there.
,, ,, 30. ,, ,, ,, ; a 9·5 mag. star at $-2^m + 7'$.
Washington :—Same star as g 2086.

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No. 430. *g* 2074. 3h 35m 18s —75° 43′·6 M. 9

Kapteyn:—In this position certainly missing on *m.* and *c.* Error of — 10min. in R.A. and star identical with *g* 1979?
Divergencies: 9m 59s·74 and 1″·4.
Cape:—1899, Dec. 22. No star there.
Washington:—Same star as *g* 1979.

No. 431. *g* 2094. 3h 37m 10s —77° 43′·2 10

Kapteyn:—Certainly missing on two pairs of plates (80°, 3h 0m, and 80°, 4h 30m). Also missing on rejected plates 80°, 3h 0m.
Cape:—1899, Feb. 14. No star; there is a pair, 10 and 10·5 mag. about 1m *pr.* the position.
Washington:—Same star as *g* 2228.

No. 432. *g* 2117. 3h 39m 50s —75° 21′·6 10

Kapteyn:—In this position certainly missing on *m.* and *c.* Error in R.A., and star identical with *g* 2107?
Cape:—1899, Dec. 22. No star there.
Washington:—Same star as *g* 2107.

No. 433. *g* 2121. 3h 40m 48s —71° 25′·4 11

Cape:—1899, Dec. 7, 9·6 mag.
1900, Jan. 6, 9·6 ,,

No. 434. *g* 2162. 3h 45m 22s —70° 6′·9 9·5

Cape:—1898, Dec. 12. No star in position given.
,, ,, 28. There is a 9·8 mag. star at 3h 45m 50s± — 70° 13′±.
Washington:—δ requires + 12′ 1″·9. (Is therefore = C.P.D. — 69°, 209 mag. 8·9.)

No. 435. *g* 2172. 3h 45m 39s —76° 15′·5 10

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1898, Dec. 22. Seen, 10 mag. (= *g* 11m) in approximate position.

No. 436. *g* 2255 (2 obs.). 3h 49m 2s —86° 0′·2 9

Kapteyn:—In this position certainly missing on plates 85°, 4h. There is a star (8·7 mag.) 5 min. preceding in C.P.D.
Cape:—1899, Mar. 17. No star.
,, Apr. 27. ,, ,,
1902, Mar. 13. No star brighter than 10m near here.
Washington:—Record straight, one wire in *a*. One observation has no *a*.

No. 437. *g* 2286. 3h 58m 38s —68° 44′·2 10

Cape:—1898. Dec. 21. 9·9 mag.

No. 438. *g* 2337. 4h 6m 0s —75° 53′·1 10

Kapteyn:—Extremely doubtful traces on *m.* and *c.*
Cape:—1899, Jan. 7, 10 mag. = 11 *g*.

No. 439. *g* 2351. 4h 8m 8s —70° 6′·9 10

Kapteyn:—Missing in four sweeps on two pairs of plates.
Cape:—1898, Dec. 27. 9·7 mag., (0·2 mag. fainter than star closely S *pr.*).
1899, Jan. 6. 9·8 mag.

No. 440. *g* 2376. 4h 10m 35s —73° 3′·0 M. 10

Kapteyn:—Extremely doubtful traces on *m.* and *c.*
Cape:—1899, Jan. 7. 10·5 mag. = 12 *g* in aproximate position.
,, Feb. 17. A pair of stars 9·7 and 9·9 mag. near the position, a nearly blank field.
1902, Mar. 14. Seen 9·6 mag. Is the N. and brighter star of a small pair.

No. 441. *g* 2419 (3 obs.). 4h 15m 10s —66° 30′·9 10·7

Kapteyn:—Near *g* 2416. Still the images of the two stars ought to be clearly separated on the plates.
This is the smaller star of the pair registered as Russell 52 1880, 45°±, 30″± mags 7 and 9 (Sydney Observations). The chief star is *g* 2416.

No. 442. *t* 1522 (4–7 obs.). 4h 15m 34s —53° 12′·5 7·8

Kapteyn:—Identical with *t* 1518. ?
Divergencies: 24s·6 and 3″·4, or with *t* 1521. ?
Divergencies: 0s·09 and 2′ 38″·0.
Cape:—Taylor identifies his star with Bris 692 (1 obs).
1899, Dec. 7. No star there.
In Dr. Downing's revision, no great change is made.

No. 443. *g* 2439. 4h 17m 3s —68° 11′·6 10

Cape:—1898, Dec. 21, 9·9 mag.

No. 444. *g* 2567. 4h 18m 29s —87° 28′·4 9

Kapteyn:—Certainly missing on plates 85°, 4h. Also missing in four sweeps on polar plate.
Cape:—1899, Mar. 17. No star, there is a 9·0m about that *a* but 14′± S. of position, say 4h 19m—87° 42′. (This star is in *g* and the C.P.D.).
1902, Mar. 14. *Nil.*
Washington:—Record straight, one wire in *a*.

No. 445. *g* 2495. 4h 20m 57s —76° 16′·1 10

Kapteyn:—Extremely doubtful traces on *m.* and *c.*
Cape:—1899, Jan. 7. No star there; a 10m about same declination, but *a*=4h 20m 48s with two distant *comites*.
,, Nov. 11. A 9·6 mag. star at about 45s.
Washington:—*a* too great by 10sec. (This is the Cape star, but it is not in the C.P.D.).

No. 446. *g* 2518. 4h 23m 35s —67° 12′·9 10

Kapteyn:—There is a star in C.P.D. 5 min. following (9·0 mag.) 28m 34s·5—67° 13′·1.
Cape:—1898, Dec. 27. No star there; an 11·3 mag. star near.
Washington:—*a* requires +5m. (Is therefore the star indicated by Kapteyn.)

No. 447. *g* 2602. 4h 31m 39s —76° 57′·3 10

Kapteyn:—Missing in six sweeps on two pairs of plates. Certainly missing on *m.* and *c.*
Cape:—1899, Jan. 11. 9·5, is a small double 9·5 and 10, 10″, *comes* N. *pr.*

No. 448. *g* 2704. 4h 42m 19s —71° 23′·8 M. 10

Cape:—1898, Dec. 28, 9·7 mag. = 10 *g*.

No. 449. *g* 2727 (3 obs.). 4h 44m 46s—68° 19′·09·8

Cape:—1899, Jan. 6, 9·6 mag., C.P.D. scale [coloured].
,, Feb. 17, 9·3 mag.
,, ,, 22, 9·1 ,,
,, Apr. 28, 9·3 ,, red 6.

No. 450. *g* 2733. 4h 45m 39s —66° 7′·9 9·0

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1899, Jan. 6. No star there so bright as 9·8 mag.
,, Feb. 22. No star.
Washington:—Error; is another observation of *g* 2734.

No. 451. *g* 2748. 4h 47m 23s —67° 45′·8 10

Cape:—1899, Jan. 7, 9·7 mag. (C.P.D. scale).

No. 452. *g* 2824. 4h 54m 45s —67° 7′·6 10

Kapteyn:—There is a star in C.P.D. 30sec. following (9·4 mag.), 4h 55m 15s·0 —67° 7′·7.
Cape:—1899, Jan. 7, 11·5 mag. = 12·5 *g* is near position given.
,, Mar. 4. *Nil.*
,, ,, 17. No star; a very faint star (11·5 mag.), is *f* the position.
Washington:—Error (see Errata); is the star indicated by Kapteyn.

No. 453. *g* 2944. —85° 6′·0 9·5
5h 0m 52s
1 2 } (10sec. discrepancy).

Kapteyn:—On *m.* (of plates 85°, 4h) extremely doubtful traces at 5h 1m 0s. On *c.* and plates 85°, 6h certainly missing.
Cape:—1899, Mar. 17. No star; a 9·4 mag. at 5h 1m± —85° 16′±
,, Apr. 28. No star; a 9·4 mag. at 5h 1m± —85° 16′±
,, ,, No star; a 11·0 mag. at 5h 1m± —85° 8′±
,, May 2. No star; a 9·4 mag. about 10′ S. of position and an 11 mag. glimpsed nearer position. (The 9·4 mag. star is C.P.D. —85° 52).
Washington:—Record straight.

No. 454. *g* 2972. 5h 6m 59s —79° 33′·1 10

Kapteyn:—Certainly missing on *m.* and *c.* There is a star in C.P.D. as follows:— (9·7 mag.), 5h 7m 3s, —79° 23′·0. Error of 10′ in δ in *g*. ?
Cape:—1899, Feb. 14. No star.
,, ,, 22. ,, ,,
,, Mar. 15. ,, ,,
,, Apr. 28. ,, ,,
Washington:—δ requires +10′.

No. 455. Z.C. 443. 5h 12m 24s —74° 58′·8 8½

Kapteyn:—In this position certainly missing on plates. Error of 1′ in declination, and star identical with Z.C. 444.
Cape:—1899, Dec. 8. Z.C. 444 only seen.

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No. 456. *g* 3027. $5^h\ 13^m\ 29^s$ —69° 52′·4 M. 10

Cape:—1899, Jan. 7. Mag. 9·6 = 10 *g*.

No. 457. *g* 3079. $5^h\ 17^m\ 32^s$ —73° 51′·8 10

Kapteyn:—Certainly missing on *m*. and *c*.
Cape:—1899, Jan. 11. Mag. 9·5 = *g* 11.

No. 458. G. 6247. $5^h\ 19^m\ 18^s$ —71° 38′·9 9

Kapteyn:—Certainly missing on *m*. and *c*.
Cape:—1899, Jan. 30. No star.
,, Feb. 26. Not seen.
Cordoba:—Probably 2° N.

No. 459. *g* 3113. $5^h\ 19^m\ 50^s$ —75° 15′·4 11

Kapteyn:—Certainly missing on *m*. and *c*.
Cape:—1899, Jan. 11. 9·9 mag. = *g* 11.

No. 460. *g* 3168. $5^h\ 25^m\ 28^s$ —64° 51′·1 10

Cape:—1899, Jan. 7, 9·5 mag.
,, Feb. 26, 9·75 ,,
,, Mar. 19, 9·8 ,,

No. 461. *g* 3190. $5^h\ 27^m\ 8^s$ —64° 40′·2 11

Cape:—1899, Jan. 7, 10 mag.
,, Feb. 26, 9·8 ,,
,, Mar. 19, 10 ,,

No. 462. *g* 3272. $5^h\ 32^m\ 34^s$ —65° 45′·9 10

Cape:—1899, Jan. 19, 9·9 mag. (C.P.D. scale).

No. 463. *g* 3328. $5^h\ 36^m\ 33^s$ —71° 4′·5 10

Kapteyn:—Missing in four sweeps on two pairs of plates.
Cape:—1899, Jan. 30. No star.
Washington:—Error in copying. Is same observation as *g* 3201.

No. 464. Z. C. 1526. $5^h\ 40^m\ 58^s$ —62° 59′·2 9½

Kapteyn:—Missing in eight sweeps on two pairs of plates. Marked with ? in Z.C. There is a star (9·6 mag.) 40 secs. preceding in C.P.D.
Cape:—1899, Dec. 9. No star in position given. C.P.D. star seen.

No. 465. *g* 3399. $5^h\ 42^m\ 5^s$ —63° 1′·6 8·0

Kapteyn:—Certainly missing on *m*., *c*., and third plate.
Cape:—1899, Jan. 9. No star there.
,, Mar. 4. *Nil*, faint stars about.
,, Dec. 9. No star.
Washington:— = *g* 5058, error 2^h in *a*.

No. 466. *g* 3432. $5^h\ 43^m\ 36^s$ —75° 25′·7 9·5

Kapteyn:—Error of —4 min. in R.A. and star identical with *g* 3381? Divergencies: $4^m\ 0^s{\cdot}0$ and 1″·6.
Cape:—1899, Jan. 11, 10 mag. = 12 *g* in approx. pos.
,, ,, 13, 10·5 mag. = 11 *g* in approx. pos. 3′±
,, Mar. 17, 10·5 mag.
1902, Mar. 14, 11 mag. near pos.
This star is in all probability not = *g*'s star.
Washington:—Record straight, one wire in *a*.

No. 467. *g* 3483. $5^h\ 46^m\ 31^s$ —75° 56′·9 M. 10

Cape:—1899, Jan. 11, 10 mag. = 10·5 *g* approx. pos.
,, ,, 13, 9·8 ,, = 10·5 *g*
,, Mar. 17, 9·7 ,, approx. pos.

No. 468. *g* 3476. $5^h\ 47^m\ 29^s$ —62° 43′·9 10

Cape:—1899, Jan. 9, 9·6 mag.

No. 469. *g* 3502. $5^h\ 47^m\ 41^s$ —74° 34′·8 9·5

Cape:—1899, Jan. 11, 9·9 mag. = 10·5 *g*.
,, Feb. 21, 9·9 ,,

No. 470. *g* 3604. $5^h\ 48^m\ 57^s$ —85° 32′·0 9·5

Kapteyn:—Certainly missing on plates 85°, 6^h.
Cape:—1899, Mar. 17. No star in exact position; there is a 10·0 mag. = 12 *g* about 1′ N say $5^h\ 49^m\pm$ —85° 31′±
Washington:—Another observation of *g* 3485.

No. 471. *g* 3565. $5^h\ 51^m\ 29^s$—74° 21′·6 10

Cape:—1899, Jan. 11. No star there.
,, Feb. 21. ,, ,, ,,
Washington:—Error of 1^h = *g* 2803.

No. 472. *g* 3601. $5^h\ 54^m\ 5^s$ —74° 3′·5 10

Cape:—1899, Jan. 11, 9·5 mag. = 10·5 *g*.
,, Feb. 21, 9·5 ,,

{Nos. 473. *g* 3628. $5^h\ 56^m\ 33^s$—69° 24′·7 10·0
and 474. *g* 3629. $5^h\ 56^m\ 34^s$—69° 30′·7 9·5

Kapteyn:—In C.P.D. there is only the star (9·1 mag.) $56^m\ 34^s{\cdot}5$ —69° 26′·6.
Cape:—1899, Jan. 9. No stars there. C.P.D. star seen, mag. about 9·0.

No. 475. *g* 3789. $6^h\ 6^m\ 51^s$ —73° 47′·0 10

Cape:—1899, Jan. 13. 9·8 mag. = 10·5 *g* in approximate position.

No. 476. *g* 3794. $6^h\ 7^m\ 13^s$ —72° 43′·7 10

Cape:—1899, Jan. 13, 9·7 mag. = 10·5 *g*.

No. 477. *g* 3804. $6^h\ 9^m\ 11^s$ —65° 39′·5 10

Cape:—1899, Jan. 9. No star there.
,, ,, 13. An 11·5 mag. in approximate position.
,, Mar. 17. There is an 11·5 mag. in approximate position.
Washington:—*a* requires + 1^m.

No. 478. *g* 3837. $6^h\ 11^m\ 39^s$ —64° 22′·6 10

Cape:—1899, Jan. 13. 10 mag. in approximate position.

No. 479. g 252. $6^h\ 13^m\ 46^s$ —66° 42′·5 9

Kapteyn:—Probably correction + 2 min. in R.A., and star identical with *g* 3896.

No. 480. S. 2941. $6^h\ 17^m\ 32^s$ —69° 6′·2 M. 7·8

Kapteyn:—Certainly missing on *c*. and *m*. Identical with S. 2963? Divergencies: $1^m\ 40^s{\cdot}7$ and 1″·6.
Cape:—The declination in S. is erroneous. The star was not observed in declination. It is C.Z. VI. 808 = C.P.D. — 69°, 590. It is therefore not equal to S. 2963.]

No. 481. *g* 3927. $6^h\ 17^m\ 42^s$ —73° 9′·8 9·0

Kapteyn:—Error of 1 min. in R.A. and star identical with *g* 3949? Divergencies: $59^s{\cdot}5$ and 3″·7.
Cape:—1899, Jan. 13. Many stars about; an 11th mag. star is near the position and a 9·6 mag. star some 4′ or 5′ *pr*.
,, Feb. 4. No star there = 9·0 mag.
Washington:—Another observation of *g* 3949 with an error of about 1^m.

No. 482. *g* 3932. $6^h\ 18^m\ 23^s$ —65° 31′·6 10

Kapteyn:—Missing in four sweeps on two pairs of plates.
Cape:—1899, Jan. 13. Many faint stars about; no star = 9·5 mag. = 10 *g* there.
Washington:—δ requires + 28′ 6″·2. (Is therefore = C.P.D. — 65° 574 = *g* 3934.)

No. 483. *g* 4076 (20 obs.). $6^h\ 21^m\ 2^s$—85° 48′·7 10·5

Kapteyn:—Certainly missing on plates 85°, 6^h.
Cape:—1899, May 25, 9·75 mag. (red).

No. 484. *g* 4066 (20 obs.). $6^h\ 23^m\ 24^s$—83° 12′·8 10

Kapteyn:—Certainly missing on plates 85°, 6^h.
Cape:—1899, May 26. 9·3 mag. (red) approximate position.
,, June 19. 9·6 mag.

No. 485. *g* 4055. $6^h\ 23^m\ 59^s$ —80° 40′·5 9·5

Kapteyn:—Certainly missing on *m*. and *c*. May there be an error of $1^m\ 40^s$ in R.A., and star be identical with *g* 4085?
Cape:—1899, Feb. 14. No star.
Washington:—Error, = *g* 4085 and is included.

No. 486. *g* 4046. $6^h\ 24^m\ 14^s$ —78° 22′·5 11

Kapteyn:—Faint image on *c*. Certainly missing on *m*.
Cape:—1899, Feb. 14, 9·3 mag red.
,, ,, 22, 9·3 ,, (reddish).
1902, Mar. 14, 9·8 ,, (scale altered ½ mag.).

No. 487. *g* 4236 (20 obs.). $6^h\ 38^m\ 39^s$ —65° 30′·6 10

Cape:—1899, Jan. 13, Feb. 4, 21, Dec. 15, 16. 11–11·5 mag. near position. Too faint for *g*.
1900, Apr. 28, Aug. 13. No star; many faint stars near.
1902, Mar. 14. No star there.
Washington:—Two observations on successive nights. Record straight and correctly reduced. Recorded as 10th mag. each night.

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No. 488. G. 8374. $6^h\ 40^m\ 30^s$ —69° 33′·4 M. 9·5

Kapteyn :—Certainly missing on four plates.
Cape :—1899, Jan. 13. No star there.
,, Feb. 4. ,, ,,
,, ,, 21. ,, ,,
See Errata in G.

No. 489. *g* 4283. $6^h\ 41^m\ 56^s$ —65° 53′·8 9

Kapteyn :—In this position certainly missing on *m.* and *c.* A correction of a wire interval in declination makes the star identical with *g* 4281.
Cape :—1899, Jan. 13. No star.
,, Feb. 4. ,, ,,
,, ,, 21. ,, ,,
,, Dec. 15. ,, ,,

No. 490. *g* 4287. $6^h\ 42^m\ 4^s$ —65° 41′·4 9·5

Cape :—1899, Jan. 13. No star there.
,, Feb. 4. ,, ,,
,, ,, 21. ,, ,,
Washington :—Same star as *g* 4285, but erroneous in position.

No. 491. *g* 4290. $6^h\ 42^m\ 19^s$ —64° 59′·2 10

Kapteyn :—There is a star in C.P.D. 40^{sec} following (9·3) $42^m\ 59^s·5$ —64° 59′·2.
Cape :—1899, Jan. 13. No star there.
Washington :—*a* requires + $39^s·92$.

No. 492. G. 8445. (10obs.) $6^h\ 42^m\ 43^s$ —59° 8′·1 9½

Kapteyn :—In this position certainly missing on *m.* and *c.* There is an extremely faint star (10·0 mag.) at $\delta = 7'·0$
Cape :—1898, Feb. 25. No star in position given. The C.P.D. star seen = 9·4 visually. There is a $9·6^m$ star ½′ S, 6^s *pr.* the 9·0 mag. star at $6^h 42^m\ 45^s$ —59° 8′·8.
,, Apr. 20. No star.

No. 493. *g* 4316. $6^h\ 43^m\ 0^s$ —75° 26′·3 9

Kapteyn:—In position of *g* certainly missing. Error of + 5 min. in R.A., and star identical with *g* 4374 ? Divergencies : $4^m\ 59^s$ and 2″·1.
Cape :—1899, Feb. 15. No star.
Washington :—Same star as *g* 4374, but erroneous in position.

No. 494. *g* 4386. $6^h\ 48^m\ 53^s$ —76° 33′·1 9·5

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, Jan. 13, 9·8 mag. = 10·5 *g*.
,, Feb. 27, 9·7 ,, = 10 *g*.

No. 495. *g* 4392. $6^h\ 50^m\ 30^s$ —63° 39′·8 10

Cape :—1899, Jan. 13, No star there.
,, Feb. 4, Invisible.
Washington :—*a* requires —7^m (and is = C.P.D. —63° No. 632).

No. 496. *g* 4437. $6^h\ 52^m\ 44^s$ —69° 51′·8 10

Cape :—1899, Jan. 13. No star there. There is a 10^m about 4′ N. of the position.
Washington :—δ requires +1° (and is thus = C.P.D. —68°, No. 573 mag. 9·6).

No. 497. *g* 4432. (2 obs.) $6^h\ 52^m\ 55^s$ —63° 51′·4 M. 9·5

Cape :—1899, Jan. 13, 9·6 mag.
,, Feb. 4, 9·4 ,,

No. 498. *g* 4460. $6^h\ 54^m\ 26^s$ —71° 24′·0 9·5

Cape :—1899, Jan. 30. No star.
Washington :—Same star as *g* 4461 —see Errata.

No. 499. g 412. $7^h\ 0^m\ 6^s$ —57° 18′·9 8·5

Kapteyn :—Probably errors of 1^m and 10″, and star identical with G. 8965. Divergencies : = $0^m\ 59^s·34$, and 10″·2.
Cape :—1899, Dec. 15. No star.

No. 500. Z.C. 61. $7^h\ 0^m\ 49^s$ —61° 47′·0 9

Kapteyn :—Certainly missing on *m.* and *c.* Marked with ? in Z.C.
Cape :—1898, Feb. 25. No star there, a 9·5 mag. at $7^h\ 0^m\ 32^s$ —61° 48′.

No. 501. *g* 4556. $7^h\ 1^m\ 39^s$ —75° 48′ 10

Cape :—1900, Feb. 21. There is a 9·2 mag. red star sufficiently near here to be identified as the star. Dec. seems right to within a min. of arc.

No. 502. *g* 4619. $7^h\ 7^m\ 53^s$ —72° 48′·9 8

Kapteyn :—Certainly missing on *m.* and *c.* The star is red according to *Gilliss*.
Cape :—Very red and variable. See Observations of Variable Stars.

No. 503. *g* 4700. $7^h\ 14^m\ 14^s$ —75° 28′·0 10

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, Feb. 15. No star there ; there is a 9·9 mag. = 10·5 *g* at $7^h\ 11^m\ 45^s$ ± same Dec.
1900, May 15. No star ; a 9·9 mag. about $7^h\ 11\frac{1}{2}^m$ —75° 28′.
Washington :—Record staight, 4 wires on *a*

No. 504. *g* 4702. $7^h\ 15^m\ 13^s$ —65° 9′·9 9·5

Kapteyn :—Error of + 1 min. in R.A. and star identical with *g* 4716. Divergencies : $0^m\ 59^s·7$ and 3″.
Cape :—1899, Jan. 13. No star in position given, an 11^m is $20^{secs.}$ *f.*
Washington :—Misprinted, another observation of *g* 4716.

No. 505. *g* 4789. $7^h\ 21^m\ 47^s$ —64° 6′·3 10

Cape :—1899, Jan. 13, 9·6 mag.

No. 506. *g* 4836. $7^h\ 24^m\ 15^s$ —72° 53′. 9

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, Jan. 13. No star as bright as 10^m near position.
Washington :—Misprinted, another observation of *g* 4903.

No. 507. *g* 4914. $7^h\ 30^m\ 23^s$ —65° 57′·9 10

Kapteyn :—Missing in four sweeps on *m.* and *c.*
Cape :—1899, Jan. 18, 9·5 mag.

No. 508. *g* 4998. $7^h\ 37^m\ 32^s$ —63° 17′·1 M. 9·0

Kapteyn :—Probably wire in error and star identical with the star in C.P.D. (8·8 mag.) $36^m\ 54^s·5$ —63° 17′·0.
Cape :—1899, Jan. 13. No star there.
Washington :—*a* requires —$37^s·58$.

No. 509. *g* 5029. $7^h\ 39^m\ 38^s$ —71° 18′·1 10

Cape :—1899, Jan. 30. No star ; a 9·9 mag. at about $7^h\ 38^m\ 24^s \pm 71°\ 20'\pm$
Washington :—For wire, record shows a 3 written over 2. If 2 is right δ needs correction + 4′ 15″·0.

No. 510. *g* 5057. $7^h\ 42^m\ 0^s$ —66° 11′·0 9

Kapteyn :—Certainly missing on two pairs of plates.
Cape :—1899. Jan. 13. No star there.
,, Feb. 10. ,, ,, ,,
Washington :—Misprinted, another observation of *g* 5056.

No. 511. *t* 3292. $7^h\ 46^m\ 46^s$ —54° 26′·3 7

Kapteyn :—Identical with G. 10,304 (8½) ? Divergencies : $11^s·7$ and 2″. Cannot be p.m. as appears by Brisbane (No. 1791). Corrected in Downing's edition of *t*.

No. 512. *g* 5318. $7^h\ 55^m\ 22^s$ —86° 33′·2 11

Kapteyn :—Certainly missing on plates 85^s, 8^h There is a star (10·5 mag.) in C.P.D. at $54^m\ 27^s$, — 86° 32′·4.
Cape :—1899, May 26. No star ; the C.P.D. gives two stars, one *s.f.* and one N *pr.*
,, June 19. No star.
Washington :—If reduced as recorded would be 76° instead of 86° but that would be outside the limit of the zone. Otherwise the record seems straight. One wire in *a*.

No. 513. *t* 3400. $7^h\ 57^m\ 30^s$ —60° 9′·7 1·0

Kapteyn :—Error of 5′ in δ and star identical with *t* 3401 ? In this case, however, there must be another error in the magnitude.
Downing has 10 mag. and identical with p. 1871 (6 mag.). But even so, no star in C.P.D.

No. 514. *g* 5336. $8^h\ 3^m\ 50^s$ —65° 59′·1 9·0

Kapteyn :—Possibly star identical with *g* 5327 (9·2 mag.) Divergencies : $1^m\ 0^s·1$ and 8″·4.
Cape :—1899, Jan. 13. No star there.
Washington :—Misprint, another observation of *g*. 5327.

No. 515. *g* 5406. $8^h\ 9^m\ 15^s$ —80° 30′·4 10

Kapteyn :—Certainly missing on two pairs of plates (80°, $7^h\ 30^m$, and 80°, $9^h\ 0^m$).
Cape :—1899, Feb. 14. No star.
Washington :—δ requires+20′. (Is thus = C.P.D. — 80°, No. 230).

No. 516 Z.C. 802. $8^h\ 9^m\ 53^s$ —56° 17′·7 10

Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on two plates.
Cape :—1898, Feb. 25, 9·6 mag. (red).
1902, Mar. 14, 10 ,,

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No. 517. *g* 5423. $8^h\ 11^m\ 52^s$ —75° 33′·8 M. 10

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, Feb. 17. No star.
1900, May 24. No star, a 9·0 mag. star at same *a*, but 6′± south thereof.
Washington :—Record straight, six wires in *a*.

No. 518. G. 11,156 (2,3 obs.). $8^h\ 15^m\ 16^s$ —66° 39′·1 11

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1898, Mar. 4, 9·9 mag.
,, ,, 28, 9·75 ,,

No. 519. Z.C. 1411. $8^h\ 17^m\ 2^s$ —63° 35′·2 10

Kapteyn :—Certainly missing on *m.* and *c.* Marked with ? in Z.C.
Cape :—1898, Mar. 4. No star so bright as 10·5 mag. there.

No. 520. *g* 5493. $8^h\ 18^m\ 50^s$ —66° 1′·6 9·5

Kapteyn :—The assumption of an error of one wire interval in declination makes the star identical with *g* 5494.
Cape :—1899, Jan. 13. No star there.
Washington :—Same as *g* 5494.

No. 521. *g* 5526. $8^h\ 19^m\ 3^s$ —81° 3′·9 9·5

Kapteyn :—Certainly missing on two pairs of plates (80°, $7^h\ 30^m$, and 80°, $9^h\ 0^m$.)
Cape :—1899, Feb. 14. No star.
1900, May 24. No star.
1902, Mar. 14. No star.
Washington :—Record straight, five wires in *a*.

No. 522. Z.C. 1918. $8^h\ 22^m\ 56^s$ —59° 33′·6 9½

Kapteyn :—At best very faint traces on *m.* and *c.*, and third plate.
Cape :—1898, Feb. 25. 9·5 mag. (red).

No. 523. Z.C. 2053. $8^h\ 24^m\ 32^s$ —60° 3′·3 9½

Kapteyn. Certainly missing on *m.*, *c.*, and third plate.
Cape :—1898, Mar. 6, 9·4 mag. yellow.
,, Apr. 20, 9·4 ,, ,,
On plate 4843 (22/4/98) 9·7 mag.

No. 524. Z.C. 2054. $8^h\ 24^m\ 33^s$ —75° 56′·9 8½

Kapteyn :—Certainly missing on *m.* and *c.*, and also missing in *Gilliss's Catalogue*.
Cape :—1899, Jan. 18. No star.
,, Mar. 17. ,,
,, ,, 19. ,, , there are two stars $10^m = 11^m$ *g* about 4′ N *pr.* the position.
1900, Jan. 6. Two stars 9·6 and 9·8 mags. near here.
,, Mar. 7. 9·7^m the *f.* and brighter of two near position.
Cordoba :—No error of computation found.
Variable :—See *Harvard Circular* No. 54.
Is 3024 R Chameleontis.

No. 525. Z.C. 2146. $8^h\ 25^m\ 38^s$ —60° 32′·3 10

Kapteyn :—Certainly missing on *m.*, *c.*, and third plate. Marked with ? in Z.C.
Cape :—1898, Mar. 6. No star in position given, a 9·75 mag. at about $8^h\ 25^m\ 43^s$ —60° 31′
,, Apr. 20. 9·75 mag. at $8^h\ 25^m\ 40^s$ —60° 31′.
This star is also on plate 4843 (22 April, 1898).

No. 526. *g* 5639. $8^h\ 31^m\ 59^s$ —62° 46′·5 M. 9·5

Cape :—1899, Jan. 13. No star there.
,, ,, 23. ,, ,,
Feb. 4. ,, ,,
Many faint stars near.
Washington :—δ requires + 16′ 51″·1 (and is thus = C.P.D.—62° No. 1046.)

No. 527. *g* 5644. $8^h\ 33^m\ 7^s$ —62° 31′·7 9·0

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, Jan. 13. Mag. 11·0 = 12·5 *g*.
,, ,, 23. ,, ,,
,, Feb. 4. ,, ,, near position.
,, Mar. 17. ,, ,, N. *f* the position.

No. 528. Z.C. 2784. $8^h\ 33^m\ 24^s$ —59° 45′·1 9½

Kapteyn :—Certainly missing on *m.* and *c.* On third plate perhaps extremely faint traces of a star.
Cape :—1898, Mar. 6, 9·6 mag. (Z.C. scale).
1902, ,, 14, 9·8 ,,

No. 529. Z.C. 2819. $8^h\ 33^m\ 53^s$ —60° 3′·6 9½

Kapteyn :—Certainly missing on *m.* and *c.* On third plate very doubtful traces.
Cape :—1898, Mar. 6, 9·8 mag. (Z.C. scale).
1902, ,, 14, 10 ,,

No. 530. *g* 5680. $8^h\ 36^m\ 29^s$ —62° 44′·7 9·5

Kapteyn :—There is a star (9·7 mag.), in C.P.D. $23^{sec.}$ following.
Cape :—1899, Jan. 13. No star there.
,, ,, 23. ,, ,, ,,
,, Feb. 4. ,, ,, ,,
Washington :—*a* requires $+23^s{\cdot}09$.

No. 531. *g* 5733. $8^h\ 37^m\ 35^s$ —84° 32′·5 10

Kapteyn :—Missing in four sweeps on plates 85°, 8^h.
Cape :—1899, May 26. No star.
,, June 19. ,, ,,
Washington :—Misprint, is same star as *g* 5735.

No. 532. *g* 5703. $8^h\ 38^m\ 50^s$ —72° 19′·1 9·0

Kapteyn :—Certainly missing on two pairs of plates.
Cape :—1899, Jan. 18. No 9·0 mag. star seen.
,, ,, 19. No star there; a 9·8 mag. about 4′ S. of the position = C.P.D. —72°, 726.
1900, May 24. No star.
Washington :—Record straight, five wires in *a*.

No. 533. Z.C. 3216. $8^h\ 39^m\ 4^s$ —55° 18′·6 9

Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on two plates. δ to be corrected by —1′ ! This star, however, is 7·0 mag., and is contained in the same Cordoba Zone with Z.C. 3216.
Cape :—1898, Feb. 26. No star seen, but an 8·95 mag. is about $8^h\ 39^m\ 0^s$ ± —55° 16′±. (This is C.P.D. —55° No. 1687.)
,, Apr. 20. Not seen in Z.C. position.
It is probable that the Z.C. requires +2′ correction in δ.

No. 534. *g* 5732. $8^h\ 41^m\ 11^s$ —63° 6′·7 M. 9·0

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, Jan. 13. No star nearer than C.P.D. —63°, 1029, *a* $8^h\ 41^m\ 29^s$, δ —63° 7′·7, mag. 9·8 C.P.D., 9·3 mag. visual. Query p.m.
,, Feb. 10. No star nearer than above.
Washington :—*a* requires $+3^m$ (and is thus = C.P.D. —63° No. 1035).

No. 535. *g* 5736. $8^h\ 41^m\ 13^s$ —63° 24′·7 10·0

Cape :—1899, Jan. 13. No star there.
,, Feb. 10. ,, ,, but there is a 10th mag. star at about $8^h\ 41^m\ 50^s$ —63° 23′·6±.
Washington :—δ requires +6′ 16″·6 (and is thus = C.P.D. —63° No. 1027).

No. 536. *g* 5875. $8^h\ 53^m\ 29^s$ —75° 27′ 10

Cape :—1900, Feb. 21. No star = 10·5 near position, nor within 10′ in declination.

No. 537. Z.C. 4591. $8^h\ 56^m\ 37^s$ — 55° 6′·3 9½

Kapteyn :—In Z.C. two accordant observations (1873, Apr. 26, and 1875, Apr. 27). Missing in four sweeps on two pairs of plates. Identical with star of C.P.D. (9·1 mag.) $56^m\ 37^s{\cdot}3$ —55° 10′·2. ?
Cape :—1898, Mar. 6. No star seen so bright as 10·5 mag. in position given.
,, ,, 8. No star there; a 9·7 mag. at about $8^h\ 56^m\ 30^s$ —55° 9′ C.P.D. star seen.
,, Apr. 23. No star there.
1900, Feb. 22. 12·0 mag., glimpsed, very hard to see but almost exactly in position.
,, Mar. 30. No star.
,, Nov 2. ,, ,,
,, ,, 13. Not seen; the 8·6 mag. star 1′ N. *f* the position has an 11·5 mag. companion 15″ S.
1901, Feb. 25. *Nil.*
,, May 16. ,,
1902, Mar. 14. No star.

No. 538. Z.C. 198. $9^h\ 2^m\ 25^s$ —61° 57′·0 10

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1898, Mar. 6. No star seen, but many faint stars are about.
,, Apr. 20. No star there; there is a 10th mag. at about $9^h\ 2^m\ 11^s$ —61° 54′±.
See also plate 4844 (22/4/98).
Cordoba :—Should be δ—62° 16′ 58″·8.
See Errata.

No. 539. *g* 6028. $9^h\ 6^m\ 17^s$ —82° 23′·7 9·5

Kapteyn :—Certainly missing on three pairs of plates (80°, $9^h{\cdot}0$; 85°, 8^h; 85°, 10^h).
Cape :—1899, May 26. No star in position given.
,, Jan. 19. No star.
There is a 9½ mag. at about $9^h\ 6^m$ —82° 27′. Two small double stars are in the field, one being C.P.D. —82°, 302.
Washington :—Equal to *g* 6027. ($9^h\ 7^m\ 49^s{\cdot}46$ — 81° 46′ 16″·6, 1850.)

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M.

No. 540. k 1700. $9^h\ 6^m\ 31^s$ —76° 39′·8 9·5

Cape :—1899, Jan. 13. No star.
,, Mar. 9. The nearest star =9·9 mag. or 11 *g* is 5′ N. *pr.*

No. 541. *g* 6050. $9^h\ 9^m\ 49^s$ —66° 8′·0 9·0

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, Jan. 13. No star.
,, Apr. 10. ,, ,,
Washington :—Error of 1^h, is = *g* 6824.

No. 542. *g* 6079. $9^h\ 11^m\ 59^s$ —63° 55′·0 9·0

Kapteyn :—In this position certainly missing on *m.* and *c.* In *Gilliss's Catalogue*, the star has been identified with Z.C. 953. The divergencies, however, are $1^s·2$, and 16′ 59″·4. (Not 16′ as given in *Gilliss's Catalogue*).
Cape :—1899, Jan. 19. Mag. 10·0.
,, ,, 23. ,, 9·95.
,, Feb. 4. ,, 10·0.
,, ,, 10. ,, 9·9.
,, ,, 17. ,, 9·8, is perhaps 1′ S. of position given.
,, ,, 26. Mag. 9·9, 2′ S. of position.
,, Mar. 17. ,, 9·9, near position.
Too faint to be *g* 6079 which, therefore, does not exist.

No. 543. Z.C. 1239. $9^h\ 15^m\ 27^s$ —59° 47′·0 9½

Kapteyn :—Certainly missing on *m.* On *c.* doubtful traces.
Cape :—1898, Mar. 8. Two stars seen, both in C.Z. The S. *pr.* = 9·5 mag., the N. *f.* = 9·7 mag., is the star queried.

No. 544. *g* 6156. $9^h\ 18^m\ 26^s$ —62° 24′·0 9·0

Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on *m.* and *c.*
Cape :—1899, Jan. 19. No star.
,, Feb. 10. ,, ,,
Washington :—Another observation of *g* 6164 ($9^h\ 18^m\ 20^s·10$ —62° 26′ 2″·5).

No. 545. G. 12,807 (3 obs.). $9^h\ 18^m\ 56^s$ —64° 15′·9 9½

Kapteyn :—Certainly missing in this position on *m.* and *c.* C.P.D. has a bright star at 6′·0.
Cape :—1898, Mar. 8. No star in position given.
,, April 20. ,, ,,
1900, Feb. 21. ,, ,,
See Errata in G.

No. 546. *g* 6213. $9^h\ 21^m\ 18^s$ —79° 29′·2 10

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, Feb. 14. No star.
Washington :—Another observation of *g* 6212 ($9^h\ 21^m\ 55^s·23$—79° 5′ 53″·2).

No. 547. Z.C. 1955. $9^h\ 24^m\ 17^s$ —59° 21′·9 9½

Kapteyn :—Very doubtful traces on *m.* and *c.*
Cape :—1898, Mar. 8, 9·5 mag.

No. 548. *g* 6244. $9^h\ 24^m\ 46^s$ —72° 24′·9 9·5

Kapteyn :—Missing in six sweeps on three pairs of plates. Double error of 3^m in R.A. and $1^{rev.}$ of the micrometer in δ would make the star identical with *g* 6285.

Cape :—1899, Jan. 19. No star there.
,, ,, 23. ,, ,, ,, ; there is a 11^m near the position given, but about 30″ N of it.
,, Feb. 10. A star 10–11 mag. near position.
,, May 11, 10·5 mag. approximate position.
,, June 7. No star.
Washington :—Another observation of *g* 6285 ($9^h\ 27^m\ 34^s·79$—72° 17′ 54″·0).

M.

No. 549. *g* 6239. $9^h\ 24^m\ 55^s$ —62° 44′·6 10

Cape :—1899, Jan. 19, 9·4 mag.
,, Feb. 10, 9·1 ,, *r* 6.
,, ,, 17, 9·25 ,,
,, ,, 26, 9·0 ,,
,, ,, 27, 9·1 ,,
,, Mar. 4, 9·05 ,, orange.
,, ,, 17, 9·05 ,,
,, Apr. 23, 9·2 ,,

No. 549*a*. *g* 6248. $9^h\ 25^m\ 5^s$ —72° 32′·0 10

Kapteyn :—In position of *g*, no star on three pairs of plates.
Cape :—There is a 9·4 mag. star 48^s *pr.* 1′ S given in C. P. D. and there is a fainter star about 40^s *f.* 1′ S estimated as follows.
1899, June 9, 10·0 mag.
,, ,, 13, 10·1 ,,
,, ,, 18, 10·2 ,,
,, ,, 24, 10·3 ,,
,, ,, 30, 10·3 ,,
,, July 7, 10·3 ,,
1900, Jan. 6, 9·9 ,,
,, ,, 8, 9·8
Washington :—*a* requires + 5^m.

No. 550. Z.C. 2092. $9^h\ 25^m\ 52^s$ —60° 10′·5 9½

Kapteyn :—Perhaps very doubtful traces on *m.* and *c.*
Cape :—1898, Mar. 10, 9·7 mag. (coloured).

No. 551. g 1106. $9^h\ 26^m\ 45^s$ —81° 1′·3 9·5

Kapteyn :—Certainly missing on *m.* and *c.* Also missing in *g.*
Cape :—1899, Feb. 14. No star.

No. 552. G. 13,037. $9^h\ 27^m\ 45^s$ —66° 42′·1 9½

Kapteyn :—The star is certainly missing on *m.*, but visible on *c.* (which contains far fainter stars than *m.*)
Cape :—1898, Mar. 10, 9·7 mag. (coloured).

No. 553. *g* 6324. $9^h\ 30^m\ 30^s$ —67° 28′·7 9·0

Kapteyn :—Certainly missing on plates 70°, $9^h\ 20^m$. There is a star in C.P.D. as follows, (9·2 mag.) $30^m\ 29^s·0$—67° 41′·1. Error three wire intervals in δ in Gillis's ?
Cape :—1899, Jan. 19. No star.
Washington :—Another observation of *g* 6325.

No. 554. G. 13,120. $9^h\ 31^m\ 16^s$ —63° 28′·6 9½

Kapteyn :—The star is certainly missing on *m.*, but visible on *c.* (which contains far fainter stars than *m.*)
Cape :—1898, Mar. 10, 9·6 mag.
,, ,, 11, 9·6 reddish.
,, May 7, 9·65 ,,

M.

No. 555. *g* 6343. $9^h\ 31^m\ 43^s$ —62° 47′·1 10·0

Cape :—1899, Jan. 19, 9·0 mag.
,, Feb. 10, 9·0 ,, yellow 5.

No. 556. Z.C. 2605. $9^h\ 32^m\ 30^s$ —60° 11′·4 9½

Kapteyn :—Certainly missing on *m.* Doubtful traces on *c.*
Cape :—1898, Mar. 11, 9·4 mag.

No. 557. Z.C. 2748. $9^h\ 34^m\ 43^s$ —58° 54′·6 9½

Kapteyn :—Very doubtful traces on *m.* and *c.*
Cape :—1898, Mar. 11, 9·7 mag. a 9·1 mag. at $9^h\ 34^m\ 26^s$—58° 53½′.
,, Apr. 28, 9·6 mag.

No. 558. Z.C. 2801. $9^h\ 35^m\ 23^s$ —66° 52′·5 8½

Kapteyn :—The star is certainly missing on *m.*, but faintly visible on *c.*, (which contains far more stars than *m.*).
Cape :—1900, Feb. 21, 9·0 mag., red 6.
,, Mar. 30, 9·0 ,, ,, 8.

No. 559. *g* 6404. $9^h\ 36^m\ 42^s$ —66° 20′·3 9·5

Cape :—1899, Jan. 19, 9·1 mag.
,, Feb. 10, 9·2 ,,

No. 560. *g* 6405. $9^h\ 36^m\ 52^s$ —66° 19′·9 10·0

Cape :—1899, Jan. 19. Mag. 9·0.
,, Feb. 10. ,, ,, red 7.

No. 561. *r* 169. $9^h\ 39^m\ 29^s$ —66° 47′·4 7

Kapteyn :—Not found by Stone. See foot-note in *Cape Catalogue*, 1880.
There is a star 7·2 mag. in declination, 20′·5.

No. 562. Z.C. 3238. $9^h\ 41^m\ 36^s$ —60° 10′·6 10

Kapteyn :—Certainly missing on *m.* Very doubtful traces on *c.*
Cape :—1898, Apr. 28, 9·8 mag.

No. 563. *g* 6500. $9^h\ 43^m\ 45^s$ —76° 51′·9 11·0

Cape :—1899, Jan. 18. Mag. 9·8 in approximate position, but the identification is poor, owing to lack of stars in field.
,, ,, 19. Mag. 9·5 = 10 *g* in approximate position.

No. 564. *g* 6509. $9^h\ 45^m\ 0^s$ —62° 26′·4 8·0

Kapteyn :—Both this star and *g* 6521 have been identified in *Gilliss's Catalogue* with Brisb. 2697. The assumption of an error of a wire interval brings indeed the position of *g* 6509, to agree with that of *g* 6521. The difference in mag., however, is considerable. The latter star being called 9·5 mag. in *Gilliss*—which is fainter than other authorities.
Cape :—1900, Feb. 21. No star there.

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No. 565. Z.C. 3538. $9^h\ 45^m\ 39^s$ —58° 59′·6 M. 9½

Kapteyn:—Certainly missing on *m*. Very doubtful traces on *c*.
Cape:—1898, Mar. 11. Mag. 9·8.
,, ,, 14. ,, 9·7, red.
,, ,, 25. ,, 9·9, ,, 8.
,, Apr. 3. ,, 9·65, ,,
,, ,, 13. ,, 9·6, ,,
,, ,, 26. ,, 9·5, ,, 8.
,, May 7. ,, 9·5, reddish.
,, ,, 15. ,, 9·55, red 7·5.
,, ,, 19. ,, 9·5.
,, June 18. ,, 9·6.
,, July 25. ,, 9·6.
Is a wide double, *comes* = 10·5 mag.

No. 566. Z.C. 3557. $9^h\ 45^m\ 57^s$ —68° 9′·6 9½

Kapteyn:—Is contained as a faint star on *c*.; certainly missing on *m*. (which is far poorer in stars).
Cape:—1900, Feb. 21. Mag. 9·1 red 5.

No. 567. Z.C. 3620. $9^h\ 46^m\ 47^s$ —62° 59′·4 9½

Kapteyn:—Certainly missing on *c*. and *m*.
Cape:—1898, Mar. 12. No star there.
See Errata in C.Z.

No. 568. Z.C. 3759. $9^h\ 48^m\ 33^s$ —53° 35′·5 9½

Kapteyn:—Missing in four sweeps on two pairs of plates. Certainly missing on two plates.
Cape:—Is variable.
See Variable Stars.

No. 569. Z.C. 3788. $9^h\ 48^m\ 59^s$ —58° 43′·2 9½

Kapteyn:—Very doubtful traces on *m*. and *c*.
Cape:—1898, Mar. 14. Mag. 9·6 (reddish).

No. 570. Z.C. 3792. $9^h\ 49^m\ 4^s$ —56° 51′·4 9½

Kapteyn:—Missing in four sweeps on two pairs of plates. There is a Z.C. star $2^{sec.}$ preceding and 18″ North.
Cape:—1900, Feb. 23. No star.
1902, Mar. 14. ,, ,,

No. 571. *g* 6600. $9^h\ 50^m\ 40^s$ —82° 19′·1 9·0

Kapteyn:—Certainly missing on three pairs of plates. (80°, $9^h\ 0^m$; 80°, $10^h\ 30^m$; 85°, 10^h.)
Cape:—1899, May 26. No star in position given, a 9½ mag. about $9^h\ 53^m\ 20^s$ —82° 18′±.
,, June 25. 9·4 mag. in position given.
,, ,, 26. No star.
,, ,, 30. ,, ,,
(The observations of June 25 must be erroneous.)
Washington:—Another observation of *g* 6652.

No. 572. *g* 6616. $9^h\ 54^m\ 2^s$ —63° 16′·7 10·0

Cape:—1899, Feb. 2, 9·3 mag.
,, ,, 17, 9·0 ,,
,, ,, 26, 9·3 ,,

No. 573. Z.C. 4294. $9^h\ 55^m\ 55^s$ —65° 23′·4 9½

Kapteyn:—Certainly missing on *m*. and *c*.
Cape:—1898, Mar. 12. No star there.
1900, Feb. 21. No star.
1902, Mar. 14. ,, ,,

No. 574. *g* 6659. $9^h\ 57^m\ 33^s$ —68° 0′·0 M. 10·0

Kapteyn:—Missing in four sweeps on *m*. and *c*.
Cape:—1899, Feb. 14. Mag. 9·1 reddish.
,, ,, 17. ,, 9·0.
,, ,, 26. ,, 9·0 orange.
1900, Jan. 6. ,, 9·1

No. 575. Z.C. 4476. $9^h\ 58^m\ 26^s$ —67° 9′·4 10

Kapteyn:—Certainly missing on *m*. and *c*. Marked with ? in Z.C.
Cape:—1898, Mar. 12. No star there.

No. 576. *G*. 30. $9^h\ 59^m\ 18^s$ —59° 29′·0 9½

Kapteyn:—In *G*. one observation.
Cape:—1900, Feb. 23. No star.
,, Mar. 30. ,, ,,
Not in Gould's *Cordoba Photographs*.
There is an unrecorded star about 9·5 mag. at $9^h\ 59^m\ 15^s \pm\ 1^s$ —59° 33′·0 ± 0″·2. This is neither in the C.P.D. nor Gould's *Cordoba Photographs*.

No. 577. *g* 6725. $10^h\ 3^m\ 43^s$ —68° 44′·2 10

Kapteyn:—Gilliss identifies it as Z.C. 10^h 193 but erroneously so.
Cape:—1899, Feb. 14. 11·0 mag. very near position.
,, ,, 17. Inv.; two faint stars near.
,, ,, 26. No star = 10^m here.
Washington:—Error, another obs. of *g* 6727.

No. 578. Z.C. 271. $10^h\ 3^m\ 49^s$ —68° 26′·6 9·5

Kapteyn:—Both C.P.D. and Gilliss have a star here at $3^m\ 44^s$—68° 27′·1. In the position of Z.C. certainly no star or *m*. and *c*.
Cape:—1899, Feb. 14. 9·1 mag. red 7.
,, ,, 17. 9·1 ,, ,, 6.
,, ,, 26. 9·1 ,, ,, 8, near a 9·0 mag. blue.
1902, Mar. 14. 9·0 ,, ,, 6.

No. 579. *g* 6816. $10^h\ 9^m\ 48^s$ —67° 27′·1 9·0

Kapteyn:—Probably error of one wire interval in R.A. and identical with *g* 6813. Divergences:—$43^s·8$ and 6″·7
Cape:—1899, Feb. 20. No star in position given. There is a $10^m\ 18^s$ *pr* and 0′·4 N.
Feb. 26. A 10·2 about 20^s *pr* position given.
May 2. No star in position given.
Washington:—Another obs. of *g* 6813.

No. 580. *g* 6875. $10^h\ 13^m\ 9^s$ —76° 42′·2 10·0

Cape:—1899, Jan 19. 9·6 mag. = 10 *g*

No. 581. g 1247. $10^h\ 16^m\ 20^s$ —57° 51′·3 7

Kapteyn:—Error in R.A. and identical with G. 14154?
Cape:—1900, Feb. 21. No star.

No. 582. *g* 6925. $10^h\ 16^m\ 28^s$ —71° 8′·0 9·5

Kapteyn:—Error of 6′ in Declination, and star identical with *g* 6926. Divergencies: $0^s·16$ and 5′ 57″·3.
Cape:—1899, Feb. 20. No star in position given.
Washington:—Error, another obs. of *g* 6926.

No. 583. Z.C. 1764. $10^h\ 24^m\ 18^s$ —53° 52′·5 M. 9½

Kapteyn:—Missing in four sweeps or two pairs of plates. Certainly missing on three plates. Probably R.A. to be corrected by −6 secs. The C.P.D. has a star 10·4 mag. about ½′ S. of position.
Cape:—1898, Mar. 9, *nil*, C.P.D. star 9·5 mag.
1900 Jan. 6, 9·6 mag. ,, ,, 10 ,,
,, ,, 8, 9·3 ,, ,, ,, 10 ,,
,, ,, 16, 9·4 ,,
,, ,, 27, 9·15 ,,
,, ,, 31, 9·2 ,,
,, Feb. 6, 9·3 ,,
,, ,, 20, 9·3 ,,
,, ,, 21, Both C.P.D. stars seen mags. 9·2 and 11·0
,, Mar. 6, 9·5 mag.
,, ,, 16, 9·2 ,,
,, Apr. 4, 9·5 ,,
,, ,, 16, 9·5 ,,
,, May 5, 9·55 ,,
,, ,, 21, 9·5 ,,
,, June 26, No star here = 10^m many faint stars about.
These observations seem inconsistent—the explanation is that there are two C.P.D. stars here, viz., $9^m·2$, $24^m\ 12^s·0$, 52′·2
10 ·4, 18 ·5, 53 ·0
as well as many fainter stars near. There is no star in the Z.C. position. The mags. recorded belong to the C.P.D. stars.

No. 584. *g* 7100. $10^h\ 28^m\ 40^s$ —67° 58′·3 9·5

Cape:—1899, Feb. 20. No star in position given.
,, ,, 21. No star.
Washington:—Error of 3^h, is *g* 4884.

No. 585. Z.C. 2210. $10^h\ 30^m\ 36^s$ —53° 36′·7 8½

Kapteyn:—Missing in six sweeps on three pairs of plates.
Marked with ? in Z.C.
Cape:—1898, Mar. 15. No star so bright as 8·5 mag. near the position.

No. 586. $10^h\ 30^m\ 54^s$ —57° 36′·1 9¾
G. Cluster Lac. 4375 No. 9.

Kapteyn:—Missing in eight sweeps on three pairs of plates. There is a star (9·5 mag.) 1′ to the North in C.P.D.
Cordoba Photographs p. 206:—The declination should be —57° 35′ 8″·5 (not 36′).

{ No. 587. Z.C. 2249. $10^h\ 31^m\ 1^s$—69° 42′·4 8¼
and 588. Z.C. 2261. $10^h\ 31^m\ 7^s$—69° 42′·4 8½

Kapteyn:—In C.P.D. only the former, which is also in *g*. The latter certainly missing on *m*. and *c*. and in *g*.
Cape:—1899, Feb. 20. There is only one star there, the preceding.
,, ,, 21. No star in latter position.

No. 589. *g* 7172. $10^h\ 32^m\ 57^s$ —76° 18′·5 10·0

Kapteyn:—Certainly some faint traces on *c*.
Cape:—1899, May 27, 9·2 mag. reddish.
,, June 19, 9·4 ,,

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M.

No. 590. *g* 7175. 10h 33m 22s —67° 35′·6 10·0

Kapteyn:—There is a star in C.P.D. as follows: (9·6 mag.) 33m 23s·5 —67° 44′·2.
It seems probable that this star is identical with Gilliss's star, which would then need a correction of 8″·5 (2 wire intervals) in declination.
Cape:—1899, Feb. 21. No star there.
,, ,, 27. *Nil.*
Washington:—Record straight, one wire in *a*.

No. 591. 10h 36m 31s —58° 57′·5 9¾
G 20 *η* Carinæ Cluster.

Not in Gould's *Cordoba Photographs.*
Kapteyn:—Certainly missing on *m.* and *c.* (In *G* 1 obs.)
Cape:—Not on photo plate exposure 3h 12m. 2 searches.

No. 592. S. 5906. 10h 37m 21s —59° 13′·0 7½

Kapteyn:—Certainly missing on *m.* and *c.* In *δ* 1 obs. Identical with G. 14641?
Cape:—Records referred to. Error, star non-existent. The R.A. is that of Cape 1880 No. 5907, the declination that of Cape 1880 No. 5977.

No. 593. 10h 38m 37s —58° 51′·1 10
G 63 *η* Carinæ Cluster.

Not in *Cordoba Photographs.*
Kapteyn:—Certainly missing on *m.* and *c.* In *G* 1 obs.
Cape:—Not on plate 3h 12m exposure.

No. 594. Z.C. 2843. 10h 39m 5s —58° 27′·6 9

Kapteyn:—Certainly missing on *m* and *c.*
Cape:—Not on plate with 3h 12m exposure.
1900, Feb. 26. No star there.
Not in Gould's *Cordoba Photographs.*

No. 595. *g* 7343. 10h 43m 29s —63° 10′·3 9·0

Kapteyn:—In this position certainly missing on *m* and *c.* Might the star be identical with *g* 7354? Divergencies:—34s·1 and 0″·5
Cape:—1899, Feb. 21. No star in position given.
Washington:—Error, another obs. of *g* 7354.

No. 596. 10h 45m 3s —59° 47′·1 10½
G 204 *η* Carinæ Cluster.

Kapteyn:—Certainly missing on *m* and *c*, 1 obs. in *G.*
Cape:—No star so bright as 11·5m, in position given on 3h 12m plate, but there is a *very faint* star near.

No. 597. 10h 46m 3s —59° 12′·1 9¼
G 215 *η* Carinæ Cluster.

Kapteyn:—Certainly missing on *m* and *c.* 1 obs. in *G.*
Cape:—Not found on 3h 12m plate.

No. 598. g 1534. 10h 46m 30s —59° 23′·4 8

Cape:—1899, Feb. 21. No star in position given.

M.

No. 599. 10h 51m 13s —57° 46′·7 9¼
G 35 *x* Carinæ Cluster.

Kapteyn:—Missing on six sweeps on three pairs of plates. Perhaps faint traces on check plate; certainly missing on two other plates. In *G* 3 observations.
Cape:—1898, Mar. 16, 9·8 mag. very red 9.
,, ,, 25, 9·7 ,,
,, April 3, 9·6 ,, red.
,, ,, 12, 9·7 ,,
,, May 15, 9·6 ,, reddish.

No. 600. *g* 7475. 10h 53m 16s —63° 51′·6 9·0

Kapteyn:—In this position certainly missing on *m* and *c.* Probably 8″·5 (2 wire intervals) in error, and star identical with the star of C.P.D. (8·9 mag.) 53m 16s·5—63° 43′·1.
Cape:—1899, Feb. 21. No star in position given.
Washington:—Record straight, six wires in *a*.

No. 601. 10h 54m 24s —57° 47′·6 10¼
G 52 *x* Carinæ Cluster.

Kapteyn:—Missing in six sweeps on three pairs of plates. Perhaps faintest traces of a star on *m* and *c.* On third plate certainly missing. In *G* 2 observations.
Cape:—1898, Mar. 16. 10·3 mag. in Z.C. scale.

No. 602. *g* 7495. 10h 54m 57s —81° 0′·6 9·5

Kapteyn:—Certainly missing on *m.* and *c.* The assumption of an error of 8′ 30″ (2 wire intervals) in *δ* makes the star identical with the star (9·2 mag.) 10h 54m 58s —80° 52′·1 in C.P.D.
Cape:—1899, Feb. 14. No star, there is a star 9·6 mag. about 3m *pr.* same dec., but Kapteyn's assumption is probably correct.
Washington:—*δ* requires + 8′ 29″·7.

No. 603. 10h 55m 58s —58° 51′·6 9½
G 65. *x* Carinæ Cluster

Kapteyn:—Extremely doubtful traces on plates.
Cape:—1898, Mar. 16, 10·0 mag.
,, ,, 25, 9·8 ,,
,, Apr. 3, 9·0 ,,
,, ,, 4, 9·75 ,,
,, ,, 12, 9·75 ,,
,, May 15, 9·7 ,,
Observations of April 3rd is evidently erroneous.

No. 604. Z.C. 4162. 10h 57m 31s —70° 53′·5 10·0

Kapteyn:—On *c.* perhaps doubtful traces. On *m.* certainly missing.
Cape:—1899, Feb. 21, 9·6 mag., perhaps a little N proximates position given.
,, Feb. 27, 9·3 mag., near position perhaps 1′ N.
,, Mar. 17, 9·25 ,,
,, May 2, 9·5 ,, red 7.
,, June 25, 9·7 ,, 1′ N of position given.
1902, Mar. 14. No star, a 9·6m 1′ N.

No. 605. 10h 57m 40s —58° 55′·8 10¼
G 82. *x* Carinæ Cluster (1 obs).

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1898, Mar. 16. No star there.
,, ,, 25. ,, ,, ,,
,, Apr. 3. ,, ,, ,,

M.

No. 606. 10h 57m 56s —57° 42′·2 10¼
G 87. *x* Carinæ Cluster.

Not in Gould's *Cordoba Photographs.*
Kapteyn:—Missing in six sweeps on three pairs of plates. Certainly missing on three plates. In *G* 1 obs.
Cape:—1898, Mar. 16. No star there but the 9·25 mag. S. 1′ has a 10m *comes* 6″ ± 180° ± = No. 72 of Gould's *Cordoba Photographs.*

No. 607. Z.C. 4337. 10h 59m 42s —54° 30′·3 10

Kapteyn:—Certainly missing on two plates. Missing on two other plates.
Marked with ? in Z.C.
Cape:—1898, Mar. 16. No star there but field very crowded and many stars 9·5 —10 mag. about. Star 11h 1m 50s —54° 26′·6 is very red:—See No. 611.

No. 608. *g* 7561. 10h 59m 48s —67° 13′·9 9·0

Kapteyn:—Certainly missing on *m.* and *c.* The identity with Z.C. 10h, 4353 seems improbable, as the divergencies 1s·6 and 10′ 7″.
Cape:—1899, Feb. 21. No star there.
,, May 2. No star; suggest *δ* = —67° 3′·9 whereabouts there is an 8·8 mag. star = C.P.D. —67° 1640.
Washington:—Another observation of *g* 7576.

No. 609. *g* 7579. 11h 0m 53s —71° 49′·9 10

Cape:—1899, Feb. 21. No star there.
,, ,, 26. ,, ,, ,,
,, Mar. 17. invisible.
Washington:—Error in copying = *g* 8418.

No. 610. Z.C. 121. 11h 1m 44s —62° 55′·6 10

Kapteyn:—Certainly missing on *m.*, *c.*, and 3rd plate. Missing on two other plates.
Cape:—1898, Mar. 12. 9·8 mag. (red?)

No. 611. Z.C. 129. 11h 1m 51s —54° 26′·7 9

Kapteyn:—Missing in four sweeps on two pairs of plates.
Cape:—Very red. See No. 607.
This star is "Variable" with a spectrum of the 4th type. (See *Harvard Circular* No. 54 of 24th Jan. 1901).
Is R W Centauri.

No. 612. *g* 7659 (2 obs). 11h 7m 30s —71° 58′·5 9·5.

Kapteyn:—There is a star 55secs. following in C.P.D.
Cape:—1899, Feb. 21. 9·4 mag. (This observation is probably of the C.P.D. star).
,, Feb. 25. Not seen.
,, Mar. 17. Inv.
Washington:— *a* requires + 54m·47.

No. 613. *t* 5115 (3–2 obs.). 11h 7m 53s —60° 38′·0 8

Kapteyn:—Identical with G. 15348 (9½)? Divergencies:—1m 1s·1 and 0″·6; besides the star of G. seems somewhat faint for *t.*
Cape:—1899, Feb. 21. No star.
In Downing's edition, mag. changed from 8 to 12.
Kapteyn's suggested identity almost certainly correct.

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No. 614. Z.C. 865. 11h 11m 59s —61° 19′·3 M. 9½

Kapteyn:—Certainly missing on four plates. Marked with ? in Z.C.
Cape:—1898, Mar. 21. No star there.
,, ,, 25. Not seen.
,, ,, 27. No star there.
1899, Jan. 23. ,, ,, ,,

No. 615. *g* 7765. 11h 15m 51s —67° 16′·4 10·0

Cape:—1899, Feb. 21. No star.
,, ,, 26. ,, ,,
,, Apr. 28. ,, ,,
Washington:—Error, another observation of *g* 7719.

No. 616. *g* 7832. 11h 21m 2s —67° 20′·6 10·0

Cape:—1899, Feb. 21, 9·4 mag.
,, ,, 26, 9·4 ,,
,, Apr. 28, 9·5 ,,

No. 617. *g* 7845. 11h 21m 32s —79° 38′·6 9·0

Kaptyen:—Certainly missing on two pairs of plates. (80°, 10h 30m, and 80°, 12h 0m). Error of 10m in R.A. and star identical with *g* 7981 ? Divergencies: 10m 0s·72 and 0″·4.
Cape:—1899, Feb. 14. No star.
Washington:—Error, is *g* 7981 and is included.

No. 618. *g* 7852. 11h 22m 13s —71° 41′·0 9·5

Cape:—1899, May 27. Mag. 9·5 red.

No. 619. *g* 7927. 11h 28m 31s —65° 8′·3 9·0

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1899, June 1. No star in position given, many faint stars (mag. 9·8—11·0) about, a curious string of stars, some double, *f* the position given.
,, ,, 25. No star.
Washington:—Error, another observation of *g* 7928.

No. 620. *g* 7943. 11h 29m 48s —63° 47′·5 9·0

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1899, June 1. No star.
,, ,, 19. ,, ,,
Washington:—Error in δ, is *g* 7944 and already included.

No. 621. Z.C. 2215. 11h 31m 36s —65° 13′·8 9½

Kapteyn:—Certainly missing on *m.* and third plate. On *c.* faintly visible.
Cape:—1898, Mar. 21. Mag. 9·5 red 9. Between two stars, each about 10 mag.

No. 622. *g* 7977. 11h 31m 47s —64° 0′·7 9·5

Cape:—1899, June 1. Mag. 8·8 red 4·5.
,, ,, 3. ,, 8·8.
,, ,, 6. ,, 8·6.
,, ,, 10. ,, 9·2.
,, ,, 13. ,, 8·95.
,, ,, 15. ,, 9·1.
,, ,, 18. ,, 9·1.
,, ,, 24. ,, 9·2 *y* 4.
,, ,, 25. ,, 9·1.
,, ,, 27. ,, 9·05.
,, July 19. ,, 9·2.

No. 623. *g* 7993. 11h 32m 55s —76° 49′·6 M. 10·0

Kapteyn:—Certainly missing on *m.* and *c.* Missing on another pair of plates.
Cape:—1899, May 27. Mag. 9·4 reddish.
,, June 24. ,, 9·5 ±.

No. 624. 11h 33m 54s —71° 52′·0
G. 15,946. (3–2 obs.) red 8½
Z.C. 2382. (1 ,,) 8
g 8009. (1 ,,) 9

Kapteyn:—Extremely doubtful traces on *c.*; and perhaps on plates on 70°, 12h 0m.
Cape:—1899, June 1. Mag. 8·5 red 7·5.
,, ,, 25. ,, 8·5 ,, 8.
h:—"Fine ruby, inclining to scarlet," 8½ mag.

No. 625. *g* 8073. 11h 37m 52s —71° 28′·3 10·0

Cape:—1899, June 1. Mag. 9·4.
,, ,, 25. ,, 9·4.

No. 626. *g* 8122. 11h 41m 1s —71° 49′·9 9·5

Cape:—1899, June 1. Mag. 9·2.
,, ,, 25. ,, 9·1.

No. 627. *g* 8165. 11h 43m 45s —84° 51′·3 10·0

Kapteyn:—Certainly missing on plates 85°, 12h 0m.
Cape:—1899, June 25. No star.
,, Sept. 1. ,, ,,

No. 628 *g* 8162. 11h 43m 54s —63° 34′·2 10·0

Cape:—1899, June 1. No star, in a rich region. C.P.D. mags. here are all round fully 0·3 mag. too faint, *i.e.*, the stars are brighter than shown in the C.P.D.
,, June 25. No star = 9·9 mag. there. C.P.D.—63°, 1993. 11h 44m·1—63° 43′ is a neat double star.
Washington:—δ requires + 18′ 55″·4. (Is thus = C.P.D.—63°, No. 1991.)

No. 629. *g* 8169. 11h 44m 45s —69° 29′·4 10·0

Kapteyn:—There is a star (9·2 mag.) in C.P.D. following 25 secs.
Cape:—1899, June 5, 9·5 mag. | July 12, 9·7 mag.
,, ,, 6, 9·55 ,, | ,, 19, 9·6 ,,
,, ,, 11, 9·6 ,, | ,, 26, 9·6 ,,
,, ,, 24, 9·7 ,, | Sept. 2, 9·6 ,, ±
,, ,, 30, 9·65 ,,
The C.P.D. star is taken as = 9·8 visual mag.

No. 630. *g* 8185. 11h 45m 56s —68° 4′·7 9·5

Cape:—1899, June 5, 8·9 mag.
,, ,, 11, 9·0 ,, *r* 8.
,, ,, 24, 9·0 ,, *r* 6.
Sept. 2, 9·1 ,, *r* 6.

No. 631. Z.C. 3351. 11h 48m 48s —58° 33′·5 9

Kapteyn:—9·8 mag. on *m.* Missing certainly on *c.* = W Centauri, 8·6 to 13·0 mags.

No. 632. *g* 8260. 11h 52m 0s —70° 41′·0 10·0

Cape:—1899, June 6, 9·6 mag.
,, ,, 24, 9·5 ,, ±

No. 633. Z.C. 3610. 11h 52m 42s —54° 39′·1 M. 9

Kapteyn:—In this position missing in four sweeps on two pairs of plates. Certainly missing on two plates. Might be due to extraordinary p.m.
Z.C. 1875·3. 11h 52m 41s·8 —54° 39′·13.
C.P.D. 1890·2. 52m 38s·0. 39·6
Cape:—1898, Feb. 23. From 12 comparisons α = 11h 52m 38s·13 mag. = 9·5 mag. (reddish).
,, Mar. 17, 9·6 mag.

No. 634. Z.C. 3621. 11h 52m 55s —68° 44′·8 9½

Kapteyn:—Perhaps extremely doubtful traces on *m.*, *c.*, and 3rd plate.
Cape:—1899, June 6, 9·5 mag. *r* 7.
,, ,, 24, 9·5 ,,
,, ,, 30, 9·4 ,, *r* 7.
,, July 26, 9·4 ,,
1900, Jan. 6, 9·4 ,,

No. 635. Z.C. 3628. 11h 53m 0s —68° 46′·6 9½

Kapteyn:—Perhaps extremely doubtful traces on *m.*, *c.*, and 3rd plate.
Cape:—1899, June 6, 9·3 mag. *r* 7.
,, ,, 24, 9·3 ,,
,, ,, 30, 9·3 ,, *r* 7.
,, July 26, 9·3 ,,
1900, Jan. 6, 9·3 ,,

No. 636. G. 16,399. 11h 54m 8s —59° 59′·9 10
Z.C. 3707. 9½

Kapteyn:—Certainly missing on *m.* Very doubtful traces on *c.*
Cape:—1898, Mar. 21. 9·8 mag. very red 9.

No. 637. *r* 268. 11h 57m 28s —77° 31′·5 7

Kapteyn:—Error in R.A. and star identical with *r* 264 ?

No. 638. Z.C. 4008. 11h 58m 43s —66° 25′·4 9½
g. 8374 (20bs.) 9·5

Kapteyn:—The star is contained on *c*; but certainly missing on *m.* (which is far poorer in stars than *c.*)
Cape:—1898, Mar. 21, 9·75 mag. (red).
,, April 13, 9·6 ,,
,, ,, 20, 9·5 ,,
,, ,, 25, 9·7 ,,
,, June 6, 9·7 ,,
1899, June 6, 9·0 ,,
,, ,, 25, 9·4 ,, (red).
,, ,, 30, 9·25 ,,
,, July 19, 9·45 ,,
Perhaps slightly variable.

No. 639. *g* 8418. 12h 1m.20s —71° 50′·2 10·0

Cape:—1899, June 6, 9·2 mag.
,, July 1, 9·0 ,,
,, Sept. 2, 9·1 ,,

No. 640. Z.C. 150. 12h 2m 21s —67° 6′·3 9½

Kapteyn:—There is an error of reduction in Cord. Zones. Corrected R.A. 30s·98. There is no star in this position however. Position still further in error and identical with Z.C. 142 ?
Cape:—1900, Feb. 23. No star in either of the two positions.

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No. 641. *g* 8452. $12^h\ 4^m\ 11^s$ —71° 36′·9 10·0

Cape:—1899, June 6, 9·5 mag.
,, July 1, 9·3 ,,
,, Sept. 2, 9·4 ,,

No. 642. *g* 8537. $12^h\ 11^m\ 36^s$ —74° 32′·5 9·0

Kapteyn:—Certainly missing on three plates.
Cape:—1899, July 19. No star.
,, ,, 27. ,, ,,
,, Sept. 9. ,, ,,
1900, July 24. ,, ,,
1902, Apr. 5. ,, ,,
Washington:—Record straight, 6 wires in *a*.
C.P.D.:—74° 897 a neat 3″ double star is in the field.

No. 643. *g* 8541. $12^h\ 12^m\ 18^s$ —70° 43′·2 10·0

Cape:—1899, June 6, 9·7 mag. in field.
,, July 5, 9·5 ,, approximate position.
1902, Mar. 24, 9·7 ,, in position given.

No. 644. $12^h\ 16^m\ 1^s$ —74° 48′·6
G. 16,865. 9½ red (3 obs.)
Z.C. 1003. 8½ (2 obs.)
g 8577. 9·0 (1 obs.)

Kapteyn:—Certainly missing on three plates.
Cape:—1899, July, 19. Mag. 9·3, red, 7.
,, ,, 27. ,, 9·2 ,, 8.
,, Sept. 9. ,, 8·7 ,,
1900, Jan. 23. ,, 9·1 ,,
,, July 24. ,, 9·2 ,,
1902, Apr. 5. ,, 9·0 ,, 7·5.
h:—"Sombre red" 8½ mag.

No. 645. Z.C. 1198. $12^h\ 19^m\ 15^s$ —61° 3′·2 9½

Kapteyn:—Certainly missing on *m.*, *c.* and third plate.
Cape:—1898, Mar. 22. No star there; near the great cluster Δ 292. In the *Cordoba Zone Catalogue* the observations of Z.C. 1198 is also entered —30^{secs} under Z.C. 1168.
1900, Feb. 23. No star = 10·5 mag. there; many faint stars near position.
See Errata in Z.C.

No. 646. *g* 8702. $12^h\ 28^m\ 14^s$ —66° 44′·2 10·0

Cape:—1899, June 6. No star.
,, July 5. ,, ,,
Washington:—Record confused, three wires in *a*.

No. 647. *g* 8717. $12^h\ 29^m\ 30^s$ —74° 18′·4 10·0

Cape:— 1899, July 19, 9·4 mag.
,, ,, 27, 9·3 ,,

No. 648. *g* 8790. $12^h\ 35^m\ 7^s$ —83° 58′·6 12

Kapteyn:—Certainly missing on plates 85°, 12^h.
Cape:—1899, Aug. 4. No star, hazy.
,, Sept. 1. There is a group of three stars 10^m—11^m near here, the most S = 11^m is very near the position.
Washington:—δ requires + 1°.
This is still not to be found in the C.P.D. It is, however, the smaller star of the pair *h* 4538. The chief star of this pair is in the C.P.D.

No. 649. *g* 8808. $12^h\ 36^m\ 26^s$ —74° 57′·1 9·5

Kapteyn:—In this position certainly missing on *m.* and *c.* There is a star (9·3 mag.) in C.P.D. .15^{secs} following.
Cape:—1899, July 19. No star.
,, Sept. 12. C.P.D. position correct, no star in *g*'s place.
1900, July 24. *Nil.*
Washington:—Record straight, two wires in *a*.

No. 650. Z.C. 2228. $12^h\ 37^m\ 22^s$ —62° 23′·4 9½

Kapteyn:—Certainly missing on *m.*, *c.*, and third plate.
Marked with a ? in Z.C.
Cape:—1898, Mar. 22. No star so bright as 10·5 mag. there.

No. 651. Z.C. 2426. $12^h\ 40^m\ 33^s$ —62° 45′·7 10

Kapteyn:—Very doubtful traces on the plates.
Cape:—1898, Mar. 22. Mag. 10·2, perhaps reddish.

No. 652. *g* 8876. $12^h\ 43^m\ 47^s$ —86° 46′·8 9·5

Kapteyn:—Certainly missing on plates 85°, 12^h.
Cape:—1899, Aug. 4. No star.
,, Sept. 1. ,, ,,
1900, July 14. *Nil.*
Washington:—Record straight, one wire in *a*.

No. 653. *g* 8894. $12^h\ 43^m\ 53^s$ —73° 42′·4 8·0

Kapteyn:—Certainly missing on *m.* and *c.* In *g.* the star is identified with Z.C. 2622 from which, however, it deviates respectively in R.A. and declination 10^s and 16″·3.
Cape:—1899, July 19. No star.
Washington:—Record straight, three wires in *a*, wire for δ not recorded, reduced for 2.

No. 654. *t* 5914. $12^h\ 45^m\ 56^s$ —59° 55′·7 8

Kapteyn:—Certainly missing on *m.*, *c.*, and third plate. The star is also contained in Brisbane (1 obs.) No. 4221. Variable?
Cape:—1899, Feb. 21. No star.
,, Mar. 21. ,, ,,
1902, ,, 24. ,, ,,
This star is retained in Downing's edition of *t*.

No. 655. *g* 8933 $12^h\ 47^m\ 42^s$ —70° 8′·3 10

Kapteyn:—The assumption of an error of three wire intervals (in Declination) would make the star identical with *g* 8932.
Cape:—1899, June, 6. No star = 9·5 mag.
,, ,, 7. ,, ,,
,, July 5. ,, ,,
Many faint stars about.
Washington:—Error: Another observation of *g* 8932.

No. 656. *g* 8938 $12^h\ 48^m\ 6^s$ —70° 50′·6 10

Kapteyn:—There is a bright star 3′ south in C.P.D. as follows:—
(9·3) $48^m\ 8^s·0$ — 70° 53′·7.
Cape:—1899, June 6. No star there; a 9·3 at 12^h $48^m·1 \pm$ — 70° 45′·6 ±.
,, July 5, No star, a 9·5 mag. about 4′ N. of position.
Washington:—Record straight, two wires in *a*.

No. 657. Z.C. 2893. $12^h\ 48^m\ 43^s$ —62° 10′·6 9½

Kapteyn:—Certainly missing on *m.*, *c.*, and third plate.
Marked with a ? in Z.C.
Cape:—1898, Mar. 22. No star so bright as 10·5 mag. there.

No. 658. *g* 8971. $12^h\ 50^m\ 27^s$ —70° 22′·3 10·0

Cape 1899, June, 6, 9·0 mag.
,, ,, 7, 9·0 ,,
,, July 5, 9·2 ,,
1902, Mar. 24, 9·0 ,, reddish.
This star is 9·5 or 9·6 mag. in the C.Z. scale.

No. 659. *g* 8992. $12^h\ 52^m\ 14^s$ —71° 47′·3 10

Cape:—1899, June 6. Mag. 9·5 red.
,, July 5. ,, 9·5
1902, Mar. 24. ,, 9·5

No. 660. *g* 8995. $12^h\ 52^m\ 30^s$ —76° 52′·7 9·3 (3 obs.)

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1899, July 19, 9·4 mag.
,, Sept. 2, 9·0 ,,

No. 661. *g* 9003. $12^h\ 53^m\ 7^s$ —76° 30′·8 10·0

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1899, July 19, 9·5 mag.
,, Sept. 2, 9·5 ,,

No. 662. Z.C. 3242. $12^h\ 54^m\ 44^s$—63° 49′·2 10

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1898, Mar. 22. No star there.
,, May 21, ,, ,,
,, 27, ,, ,,
,, Aug. 4, ,, ,, the 10^m at $12^h\ 54^m$ 33^s – 63° 51′·4 is double.
,, Sept. 13. No star.
1900, Feb. 23. ,, ,,

No. 663. *g* 9055. $12^h\ 57^m\ 31^s$ —72° 7′·7 10·0

Cape:—1899, July 22, 9·5 mag., red, 6.
,, Sept. 19, 9·6 ,,

No. 664. Z.C. 3436. $12^h\ 58^m\ 15^s$—76° 33′·0 10·0

Kapteyn:—Certainly missing on *m.* and *c.* Also missing in *g.* There is a star (9·3 mag.) in C.P.D. preceding 17 secs.
Cape:—1899, July 19. No star.
,, Sept. 2. ,, ,,

No. 665. *g* 9107. $13^h\ 2^m\ 6^s$ —72° 32′·0 9·5

Kapteyn:—Extremely doubtful traces on plates 75°, 13^h.
Cape:—1899, July 22, 9·0 mag., red, 5.
,, Sept. 19, [9·2] ,,

No. 666. *g* 9115. $13^h\ 2^m\ 36^s$ —70° 47′·5 10·0

Cape:—1899, June 15, 9·2; same mag. as star *n.f.* 3′.
,, Sept. 19, 9·6.
,, ,, 23, 9·5.
1900, Jan. ,, 9·2 yellow 3.

No. 667. *g* 9128. $13^h\ 3^m\ 48^s$ —77° 34′·7 9·5

Cape:—1900, Feb. 23, 9·3 mag., red, 7.
,, ,, 26, 9·15 ,, ,, 6.
,, Apr. 18, 9·1 ,,

No. 668. *g* 9162. $13^h\ 6^m\ 5^s$ —69° 37′·6 10·0

Cape:—1899, June 15, 9·6 mag.
,, July 19, 9·5 ,,

No. 669. *g* 9192. $13^h\ 9^m\ 32^s$ —83° 34′·1 9·0

Kapteyn:—Certainly missing on plates 85°, 14^h.
Cape:—Is variable. See obs. of Variable Stars.

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M.

No. 670. g 9220. $13^h\ 10^m\ 22^s$ —75° 55′·0 10·0

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, July 22. No star, a 10^m about $13^h\ 12^m$—75° 55′.
,, Sept. 2. No star.
Washington :—Error 1^h in $\alpha = g$ 8514.

No. 671. g 9223. $13^h\ 10^m\ 49^s$—79° 36′·7 10·0

Kapteyn :—Extremely doubtful traces on *c.* On *m.* certainly missing.
Cape :—1899, July 29, 9·6 mag.
,, Sept. 1, 9·8 ,,

No. 672. g 9229. $13^h\ 11^m\ 1^s$ —72° 5′·9 9·5
(2 obs.)

Kapteyn :—Missing in four sweeps on two pairs of plates.
Cape :—1899, July 22, 8·9 mag., yellow, 4.
,, Sept. 19, 9·3 ,,
,, ,, 23, 9·3 ,,
,, Dec. 16, 8·9 ,, red.
1900. Apr. 18, 8·9 ,,
,, May 8, 8·95 ,,

No. 673. g9254. $13^h13^m27^s$—80° 25′·8 10·0
and 674. g9258. $13^h13^m35^s$—80° 26′·2 11·0

Kapteyn :—The latter star is contained in C.P.D. Of the former only extremely doubtful traces on *c.* On *m.* certainly missing.
Cape :—The following of these two stars is visually = 9·4 mag.
Of the *pr.* star there are the following observations.

1899, July	29,	9·9 mag.		
,, Sept.	1,	9·2	,,	colour, 6.
,, ,,	2,	9·0	,,	,, 6.
,, ,,	6,	9·1	,,	
,, ,,	9,	9·15	,,	
,, ,,	12,	9·2	,,	
,, ,,	16,	9·1	,,	
,, ,,	19,	9·2±	,,	
,, ,,	23,	9·1±	,,	
,, ,,	24,	9·2	,,	
,, ,,	26,	9·25	,,	
,, Oct.	1,	9·3	,,	colour, 8.
,, ,,	6,	9·2	,,	
,, ,,	10,	9·1	,,	colour, 7.
,, ,,	14,	9·1	,,	,, 7·5.
,, ,,	18,	9·0	,,	
1900, Jan.	1,	8·8	,,	colour, 6.
,, ,,	6,	9·1	,,	,, 6.
,, ,,	18,	9·1	,,	
,, May	3,	9·1	,,	

The first observation seems erroneous. The colour sufficiently accounts for the absence of this star from the C.P.D.

No. 675. Z.C. 838. $13^h\ 13^m\ 46^s$—60° 43′·4 10

Kapteyn :—Certainly missing on *m.* and *c.* Marked with ? in Z.C.
Cape :—1898, May 7. No star there.

No. 676. G. 18,176. $13^h\ 14^m\ 39^s$—78° 17′·2 8½

Kapteyn :—Certainly missing on *m.* and *c.* Also missing in Z.C. and *g.*
Cape :—1899, July 29. No star.
,, Sept. 1. ,, ,,

No. 677. Z.C. 1009. $13^h\ 16^m\ 43^s$—62° 46′·1 9½

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :— 1898, Mar. 22. No star there.
,, Apr. 3. ,, ,,
1900, Feb. 26. ,, ,,

M.

No. 678. t 6208. $13^h\ 21^m\ 58^s$ —58° 52′·9 7
(1 obs.)

Kapteyn :—Identical with G. 18,300 (8) ? Divergencies: $1^m\ 41^s{\cdot}1$ and 2″·0.
Kapteyn's suspicion correct. See Downing's edition of *t.*

No. 679. g 1584. $13^h\ 22^m\ 41^s$ —83° 48′·9 10

Kapteyn :—Error of 1^m in R.A. and star identical with g 9373 ?
Cape :—1900, Feb. 26. No star in *g's* position.

No. 680. g 9393. $13^h\ 24^m\ 18^s$ —80° 16′·7 10

Kapteyn :—Extremely doubtful traces on *c.* On *m.* certainly missing.
Cape :—1899, July 29, 9·7 mag.
,, Sept. 1, 9·5 ,,

No. 681. S. 7425. $13^h\ 25^m\ 58^s$ —70° 47′·3 10
(3–4 obs.)

Kapteyn :—Extremely doubtful traces on *m.* and *c.* On third plate certainly missing.
Cape :—1899, June 15, 10·1 mag.

No. 682. g 9468. $13^h\ 29^m\ 44^s$ —66° 21′·1 9·5

Cape :—1899, June 15, 9·25 mag. (red)
,, ,, 25, 9·2 ,, ,, 7.
,, July 5, 9·3 ,,

No. 683. g 9507. $13^h\ 33^m\ 32^s$ —79° 44′·1 10

Kapteyn :—Extremely doubtful traces on *c.* On *m.* certainly missing.
Cape :—1899, Aug. 4. 9·8 mag. in approximate position.

No. 684. g 9513. $13^h\ 33^m\ 41^s$ —78° 2′·6 10·0

Kapteyn :—Doubtful traces on *c.* Certainly missing on *m.*
Cape :—1899, Aug. 4. 9·2 mag. in approximate position.
1902, Mar. 24. 9·1 ,,

No. 685. r 351. $13^h\ 36^m\ 47^s$ —61° 59′·2 7

Kapteyn :—Also not found by Stone. (See footnote *Cape Cat.* for 1880.)

No. 686. g 9553. $13^h\ 36^m\ 59^s$ —67° 27′·4 10

Kapteyn :—There is a star (9·4 mag.) in C.P.D. 40 sec. following.
Cape :—1899, June 15. There are two 11^m stars hereabout 45″ apart, and they are perhaps involved in nebulosity. Moonlight.
,, ,, 24. Not seen < 9·9 mag. Moon.
,, ,, 25. Small nebula glimpsed ? Moon.
,, July 5. Small nebula or group of very faint stars.
Washington :—α requires + $40^s{\cdot}00$.

No. 687. g 9577. $13^h\ 40^m\ 41^s$ —83° 52′·1 10·0

Kapteyn :—Certainly missing on plates 85°, 14^h.
Cape :—1899, Aug. 4. No star.
,, Sept. 1. ,,
1900, July 24. *Nil.*
Washington :—Record straight, 5 wires in α.

M.

No. 688. G 18,800. $13^h\ 43^m\ 36^s$—83° 31′ 9·0
{1 obs. in α / 0 ,, δ}

Kapteyn :—Certainly missing on plates 85°, 14^h.
Cape :—1899, Aug. 4. No star.
,, Sept. 1. ,,
There are :—10·5 mag. $13^h\ 44^m$—83° 33′±.
9·7 ,, 13 43 —83 27 ±.
1900, July 24. *Nil.*, some faint stars (10^m–11^m) near $13^h\ 44^m$—83° 35′±.

No. 689. g 9628. $13^h\ 43^m\ 44^s$ —77° 11′·0 9·5

Kapteyn :—Certainly missing on two pairs of plates (75°, 14^h, and 80°, $13^h\ 30^m$).
Cape :—1899, Aug. 4. No star.
1900, July 24. 9·0 mag.
Washington :—Record straight, 3 wires in α.
See Variable Stars.

No. 690. g 9645. $13^h\ 45^m\ 31^s$ —80° 48′·5 10·0

Kapteyn :—Extremely doubtful traces on *c.* On *m.* certainly missing.
Cape :—1899, Aug. 4. Probably no star but field not well identified.
,, Sept. 1, 9·1 mag. = 9·5 g.
,, ,, 2, 9·2. ,,
1900, Jan. 23, 9·2 ,, colour 3.

No. 691. g 1603. $13^h\ 48^m\ 30^s$ —61° 43′·9 6·5

Kapteyn :—Error of about 8″·5 in declination, and star identical with C.P.D., —61,4194 ! (The error of 8″·5 is very common in Gilliss's *Circumpolar Catalogue* = two wire intervals).

No. 692. g 9758. $13^h\ 53^m\ 33^s$ —69° 49′·2 10·0
(1 obs.)

Cape :—1899, June 15, 9·2 mag.
,, July 5, 9·55 ,,
,, ,, 19, 9·5 ,,
,, Sept. ,, 9·6 ,,

No. 693. g 9757. $13^h\ 54^m\ 18^s$ —81° 40′·2 9·5

Kapteyn :—Extremely doubtful traces on *c.* On *m.* certainly missing.
Cape :—1899, Aug. 4. 8·9 mag., red, 5.
,, Sept. 1, 9·0 ,, ,,

No. 694. g 9791. $13^h\ 56^m\ 36^s$ —72° 12′·1 9·5

Cape :—1899, July 22, 8·7 mag., r 3.
1900, Jan. 23, 8·9 ,, y 5.

No. 695. t 6544. $13^h\ 57^m\ 20^s$ —54° 4′·2 6·7
(4 obs.)

Kapteyn :—Probably 5 secs. in error, and identical with t 6545.
Correction indicated is confirmed by Downing's edition of *t.*

No. 696. g 9839. $14^h\ 0^m\ 16^s$ —71° 40′·1 10

Cape :—1899, June 15, 9·1 mag.
,, July 5, 9·2 ,,

No. 697. g 9831. $14^h\ 0^m\ 23^s$ —77° 26′·9 7·0

Kapteyn :—Certainly missing on two pairs of plates. (75°, 14^h and 80°, $13^h\ 30^m$).
Cape :—1899, Aug. 4. No star.
,, Sept. 1. ,,
Washington :—Error, another observation of g 9832.

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M.

No. 698. *g* 9821. $14^h\ 0^m\ 28^s$ —81° 3′·9 10·0

Cape :—1899, Aug. 4, 9·4 mag.
,, Sept. 1, 9·4 ,,

No. 699. *g* 9855. $14^h\ 1^m\ 56^s$ —77° 54′·3 10

Cape :—1900, Mar. 6, 9·35 mag.

No. 700. *g* 9854. $14^h\ 1^m\ 59^s$ —78° 51′·8 10·0

Cape :—1900, Mar. 6, 8·95 mag. *y* 4.
,, Mar. 31, 9·0 ,,
,, Apr. 18, 8·95 ,,
1902, ,, 9, 9·1 ,, reddish.

No. 701. Z.C. 247. $14^h\ 3^m\ 46^s$ —63° 34′·1 10

Kapteyn :—Certainly missing on *m.* and *c.* In Gould's Zones slight error of reduction.
63° 34′ 5″·4 read 63° 33′ 55″·4.
Cape :—1898, May 7. No star there.

No. 702. *g* 9889. $14^h\ 4^m\ 23^s$ —79° 57′·7 10·0

Kapteyn :—Extremely doubtful traces on *c.* On *m.* certainly missing.
Cape :—1899, Aug. 4, 9·8 mag.

No. 703. Z.C. 440. $14^h\ 6^m\ 52^s$ —53° 24′·9 9

Kapteyn :—Certainly missing on two plates. Missing on two other plates.
Cape :—1898, May 3, 9·7 mag.
,, ,, 7, 9·6 ,,
,, ,, 26, 9·6 ,,
1902, Apr. 9, 9·5 ,,
Mags. of surrounding stars not very good—this star is really about 9·2 mag. Many coloured stars in this region.

No. 704. Z.C. 453. $14^h\ 7^m\ 10^s$ —73° 37′·8 9½

Kapteyn :—Certainly missing on *m.* and *c.* Marked with ? in Z.C.
Cape :—1899, July 22. No star.
,, Sept. 6, ,, ,,

No. 705. Z.C. 548. $14^h\ 8^m\ 28^s$ —67° 57′·7 9½

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, June 15, 9·0 mag.
,, July 5, 9·1 ,,
1902, Apr. 9, 9·2 ,,

No. 706. *g* 9960. $14^h\ 9^m\ 55^s$ —79° 48′·9 10

Kapteyn :—Extremely doubtful traces on *c.* On *m.* certainly missing.
Cape :—1899, Aug. 4, 9·6 mag.

No. 707. Z.C. 690. $14^h\ 10^m\ 48^s$ —71° 49′·4 9·0

Kapteyn :—In this position certainly missing on *m.* and *c.* Error of 1′ in declination and star identical with Z.C. 689 (observed in same Zone). Divergences : $0^s{\cdot}11$, and 0′ 58″·7.
Cape :—1899, June 15, 9·6 mag.
1900, Jan. 23, 9·6 ,,
Both stars seen.

No. 708. *g* 9991. $14^h\ 11^m\ 32^s$ —70° 24′·5 9·5

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, June 15. No star.
,, ,, 17, ,, ,,
Washington :—δ requires—22′ 19″·1 (but even thus not in C.P.D.). Looked for :—
Cape :—1900, July 25, 9·8 mag.
,, Aug. 20, 9·8 ,, good.

M.

No. 709. Z.C. 758. $14^h\ 11^m\ 53^s$ —71° 52′·5 9

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, June 15, 9·5 mag.
1900, Jan. 23, 9·5 ,,

No. 710. Z.C. 849. $14^h\ 13^m\ 18^s$ —59° 46′ 7 10

Kapteyn :—Certainly missing on *m.* Very doubtful traces on *c.*
Cape :—1898, May 13, 10·0 mag.
,, ,, 19, 9·45 ,,
,, June 1, 9·7 ,,
,, ,, 10, 9·6 ,,
,, ,, 18, 9·65 ,,
,, July 8, 9·9 ,,
,, ,, 25, 9·8 ,,
,, Aug. 4, 10·0 ,,
,, ,, 6, 9·9 ,,
,, Sept. 13, 9·8 ,,

No. 711. *g* 10,011. $14^h\ 13^m\ 20^s$ —70° 23′·5 9·0

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, June 15. No star.
,, ,, 17. ,, ,,
1900, Jan. 23. ,, ,,
Washington :—Four wires in α. Record has been changed 10′ in ink. (But there is still no star in C.P.D.).
Cape :—1900, Aug. 8. No star either ±10′.

No. 712. *g* 10,183. $14^h\ 25^m\ 15^s$ —69° 44′·3 10

Cape :—1899, June 17, 9·4 mag. ±.
,, Sept. 2, 9·4 ,, ±.

No. 713. *g* 10,215. $14^h\ 28^m\ 0^s$ —66° 5′·0 10

Cape :—1900, Mar. 6. No star.
,, ,, 31. ,, ,,

No. 714. *g* 10,227. $14^h\ 29^m\ 7^s$ —71° 4′·7 9·8
(2 obs.)

Kapteyn :—There is a star (9·4 mag.) 4^m preceding in C.P.D.
Cape :—1899, June 17. Mag 9·5.
,, ,, 25. ,, 9·4 *r* 6 (East).
,, ,, ,, ,, 9·5 (West).
,, July 5. ,, 9·4.
,, Sept. 2. ,, 9·3.
1900, Jan. 23. ,, 9·45.

No. 715. G. 19,797. $14^h\ 29^m\ 46^s$ —59° 17′·5 9¼

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1898, May 13, 9·9 mag.
,, ,, 19, 9·9 ,,
,, June 1, 9·8 ,,
,, July 8, 9·85 ,,

No. 716. Z.C. 2300. $14^h\ 36^m\ 17^s$ —64° 22′·1 9½

Kapteyn :—Extremely doubtful traces on the plates.
Cape :—1898, May 15. Mag. 9·5 reddish.
,, ,, 16. ,, 9·4 ,,
,, ,, 19. ,, 9·5

No. 717. Z.C. 2903. $14^h\ 45^m\ 34^s$ —70° 56′·3 9

Kapteyn :—Certainly missing in this position on *m.* and *c.* Missing on two other plates. Double error of 1^{sec} and 10′, and star identical with *g* 10,482 ? Divergencies : $0^s{\cdot}94$ and 10′·0″·6
Cape :—1899, June 17. No star.
,, Sept. 2. Invisible.
C.P.D.—70°, 1860 a neat 3″ double star is in this field.

M.

No. 718. Z.C. 2940. $14^h\ 46^m\ 14^s$ —71° 25′·5 9·0

Kapteyn :—In C.P.D. and *g* there is a star 8^{sec} following.
Cape :—1899, June 17. Star glimpsed in position given, say 11·5.
,, June 25. Mag. 11·5 in position.
,, July 5. ,, 11·5
,, Sept. 2. ,, 11·5 glimpsed.
1900, Feb. 1. A very faint star near the position, but S. *pr.*
In *g* identified with *g* 10,493 which implies an error of 11′ in Z.C. See also footnote in *g*.

No. 719. *g* 10,557. $14^h\ 50^m\ 40^s$ —67° 56′·4 9·5

Cape :—1899, June 18. No star.
,, ,, 25. ,, ,,
,, July 1. ,, ,,
In C.P.D. the star C.P.D. —68°, 2232 is marked as double—the *comes* is very faint, say 11·0 mag.
Washington :—δ requires—9′. (Is thus = C.P.D. —68° No. 2264.)

No. 720. *g* 10,561 $14^h\ 50^m\ 54^s$ —66° 49′·3 9·0

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, June 18. No star.
,, Sept. 2. ,, ,,
A $9{\cdot}6^m$ at $14^h\ 51^m\ 10^s$—66° 48′·0±.
Washington :—Error, another observation of *g* 10,562.

No. 721. *g* 10,524. $14^h\ 51^m\ 55^s$ —85° 47′·3 10
(2 obs.)

Kapteyn :—Certainly missing on plates 85°, 14^h. There is a star (9·6 mag.) in C.P.D. at δ = 45′·2.
Cape :—1899, Aug. 4. No star.
,, Sept. 1. ,, ,,
1900, Mar. 31. A very faint object like a small double N. and S. is near there.
Gillis's P.Z. 10,501 mag. 9·4 is double *comes* 10^m S. *pr* 15″±.
Washington :—δ requires+2′.

No. 722. *g* 10,597. $14^h\ 53^m\ 25^s$ —74° 29′·0 9·5

Cape :—1899, July 22. No star.
,, Sept. 1. ,, ,,
Washington :—Equal to *g* 10,598 (1850 α $14^h\ 50^m\ 48^s{\cdot}30$—74° 14′ 28″·9).
[This leaves a difference of about 1′ in the δ's].

No. 723. *g* 10,730. $15^h\ 2^m\ 2^s$ —66° 35′·8 10

Cape :—1899, June 18, 9·0 mag.
,, Sept. 2, 9·1 ,, r 7.

No. 724. *g* 10,726. $15^h\ 3^m\ 10^s$ —79° 56′·8 10

Kapteyn :—Certainly missing on *m.* and *c.* There is a star (9·3 mag.) $1^m\ 30^s$ preceding in C.P.D.
Cape :—1899, Aug. 4. No star.
Washington :—α requires—$1^m\ 36^s{\cdot}46$.
(Is thus = C.P.D.—79°, No. 815).

No. 725. *g* 10,747. $15^h\ 3^m\ 26^s$ —67° 26′·8 10

Cape :—1899. June 18, 9·3 mag.
,, Sept. 2, 9·1 ,,

No. 726. Z.C. 246. $15^h\ 3^m\ 42^s$ —59° 51′·9 8½

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1898, May 15. Mag. 9·6 redness, 9·5.
,, ,, 21. ,, 9·6 very red, 9·0.
,, June 1. ,, 9·5 red, 9·5.
,, Aug. 6. ,, 9·3 very very red.
,, Sept. 13. ,, 9·6 red, 8·5.
A very remarkable object.

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No. 727. g 10,835. $15^h\ 9^m\ 16^s$ —66° 45′·2 M. 9·5

Cape :—1899, June 19. No star.
,, Sept. 2. ,, ,,
Washington :—Is another observation of g 10,858.

No. 728. g 10,858. $15^h\ 11^m\ 17^s$ —66° 45′·0 9·5

(This is also g 10,835. See preceding entry.)
Cape :—1899, June 19, 9·6 mag.
,, Sept. 2, 9·2 ,,
,, ,, 5, 9·25 ,,
,, Oct. 3, 9·55 ,, r 7.
1900, Mar. 31, 9·5 ,,

No. 729. g 10,949. $15^h\ 17^m\ 28^s$ –67° 55′·2 9·5

Kapteyn :—There is a star (9·2 mag.) $4^{min.}$ preceding in C.P.D.
Cape :—1899, June 19. No star.
,, Sept. 2. ,, ,,
Washington :—Is equal to g 11,224.

No. 730. r 434. $15^h\ 26^m\ 38^s$ —56° 41′·0 7

Kapteyn :—Errors in declination and identical with G. 21,082 ?

No. 731. Z.C. 2049. $15^h\ 29^m\ 44^s$ —60° 47′·2 9·5

Kapteyn :—Certainly missing on m. and c. Marked with ? in Z.C.
Cape :—1900, Mar. 8. No star.

No. 732. r 442. $15^h\ 32^m\ 35^s$ —53° 55′·3 6

Kapteyn :—Error in R.A. and star identical with c. 2816. The declinations agree excellently.

No. 733. Z.C. 2294. $15^h\ 33^m\ 13^h$ –63° 36′·9 9½

Kapteyn :—Certainly missing on m. and c.
Cape :—1898, May 15, 10·0 mag.
,, ,, 21, 9·75 ,,
,, ,, 26, 9·8 ,,

No. 734. Z.C. 2401. $15^h\ 34^m\ 27^s$ –63° 6′·8 9

Kapteyn :—Certainly missing on m. and c.
Cape :—1898, May 15, 9·5 mag., perhaps reddish.
,, ,, 21, 9·5 ,, yellow, 6.
,, ,, 26, 9·4 ,, yellowish.

No. 735. r 455. $15^h\ 45^m\ 4^s$ —60° 6′·5 7

Kapteyn :—Error of 30 secs. in R.A., and star identical with r 456 ? Divergencies : $30^s·7$ and 7″·9.
Stone seems to assume the identity.

No. 736. $15^h\ 46^m\ 3^s$ —74° 7′·0
G. 21,518. 9½ (3 obs.)
g 11,344. 9·5 (1 obs.)

Kapteyn :—Certainly missing on m. and c. According to G., star orange yellow.
h:—9^m Sombre red.

No. 737. g 11,345. $15^h\ 46^m\ 8^s$ —72° 44′·3 9·5

Kapteyn :—Certainly missing on three plates. There is a star (9·2 mag.) preceding $3^m\ 5^s$ in C.P.D.

Cape :—1899, July 22. No star ; there is a 9·5 mag. at about $15^h\ 46^m\ 20^s$—72° 42′.
,, Sept. 2. No star.
Washington :—δ requires + 12′ 37″·5. (Is thus equal to C.P.D. —72° No. 1893).

No. 738. Z.C. 3364. $15^h\ 47^m\ 57^s$ —67° 3′·5 M. 9

Cape :—1900, Mar. 8. 9·0 mag.
This star is = C.P.D. —67° No. 3003 mag. 9·7 and should therefore not have appeared in the present list.

No. 739. g 11,427. $15^h\ 51^m\ 26^s$ —67° 7′·9 10·0

Cape :—1899, June 19, 9·4 mag.
,, Sept. 6, 9·45 ,,

No. 740. g 11,459. $15^h\ 54^m\ 20^s$ —72° 32′·7 8·5

Kapteyn :—Certainly missing on six plates.
Cape :—1899, July 22. No star as bright as 10^m there ; several faint stars near.
,, Sept. 2. No star.
Washington :—Clerical error of 1^h = g 10,607.

No. 741. g 11,453. $15^h\ 54^m\ 40^s$ —78° 18′·8 9·0

Kapteyn :—Certainly missing on two pairs of plates. (80°, $15^h\ 0^m$ and 80°, $16^h\ 30^m$).
Cape :—1899, Aug. 4. No star ; there is a 9·5 mag. at about a $15^h\ 53^m\ 30^s$—78° 15′.
Washington :—Is g 13,000.

No. 742. g 11,483. $15^h\ 55^m\ 51^s$ —68° 2′·5 10·0

Cape :—1899, June 19, 9·5 mag.
,, Sept. 6, 9·0 ,,
,, Oct. 3, 9·0 ,, red, 6.

No. 743. g 11,481. $15^h\ 56^m\ 0^s$ —70° 49′·3 10·0

Cape :—1899, June 19, 9·2 mag.
,, 25, 9·2 ,,
,, July 1, 9·1 ,, r 6.

No. 744. g 11,482. $15^h\ 56^m\ 16^s$ —73° 35′·7 9·0

Kapteyn :—Certainly missing on m. and c.
Cape :—1899, July 22, No star.
,, Sept. 1, ,, ,,
Washington :—Is g 11,206.

No. 745. g 11,497. $15^h\ 56^m\ 29^s$ —67° 15′·3 9·5

Kapteyn :—There is a star (9·2 mag.) 30′ to the south in C.P.D.
Cape :—1899, June 19. 9·4 mag.
,, Sept. 6. 9·0 ,, colour 5.
The neighbouring star C.P.D. —67°, 3020 is a close double star.

No. 746. Z.C. 201. $16^h\ 2^m\ 36^s$ —71° 2′·3 9½

Kapteyn :—Certainly missing on m. and c. and third plate.
Cape :—1899, June 19, 9·1 mag.
,, ,, 25, 8·95 ,, colour 4.
,, July 1, 9·0 ,, perhaps reddish.

No. 747. g 11,574. $16^h\ 3^m\ 33^s$ —77° 56′·8 9·5

Kapteyn :—Certainly missing on plates 80°, $16^h\ 30^m$.
Cape :—1899, Aug. 4. No star.
Washington :—Clerical error of 2 hours. Is = g 13,102.

No. 748. g 11,616. $16^h\ 5^m\ 26^s$—68° 16′·4 M. 10·0

Kapteyn :—There is a star (9·2 mag.) 18 secs. preceding in C.P.D.
Cape :—1899, June 22. No star.
,, Sept. 1. ,, ,,
Washington :—α requires 20 secs. correction.

No. 749. r 466. $16^h\ 8^m\ 40^s$ —64° 20′·2 7

Kapteyn :—Error in R.A. and star identical with C.P.D. —64°, 3442 ?

No. 750. g 11,713. $16^h\ 12^m\ 1^s$ —67° 58′·3 9·0

Kapteyn :—Certainly missing on m. and c.
Cape :—1899, June 22. No star.
,, July 1. ,, ,,
Washington :—Erroneous, is another observation of g 11,712.

No. 751. Z.C. 911. $16^h\ 12^m\ 48^s$ —63° 44′·6 10

Kapteyn :—Certainly missing on m. and c.
Cape :—1899, May 3. No star in position given. There is an 8·5 mag. star about 1′ S. = C.P.D. — 63°, 3908. Confirmed by 30 observations, 1898 May 27 to 1899, Feb. 2.

No. 752. g 11,735. $16^h\ 14^m\ 26^s$ —75° 31′·5 9·5

Kapteyn :—Certainly missing on m. and c.
Cape :—1899, July 22. No star.
,, Sept. 6. ,, ,,
Washington :—Record confused, 2 wires in α.

No. 753. Z.C. 1256. $16^h\ 17^m\ 49^s$ —66° 29′·2 9½

Kapteyn :—Certainly missing on m. and c. (65°, $16^h\ 0^m$) also certainly missing on m. and c. (65°, $16^h\ 40^m$). Probably identical with C.P.D. —68°,2736 (10·0) $16^h\ 17^m\ 48^s·5$, —68° 28′·9.
Cape :—1898, May 5—June 14. No star. Cape M. Obs. (2), and the C.P.D. give for a 9·65 mag. star near position.
Cape $16^h\ 17^m\ 40^s·4$ —66° 30′·0.
C.P.D. $16^h\ 17^m\ 42^s·0$ —66° 30′·0.

No. 754. Z.C. 1537. $16^h\ 22^m\ 30^s$ —53° 23′·9 9½

Kapteyn :—Missing in four sweeps, on two pairs of plates. Extremely faint traces on m. and c.
Cape :—1898, May 26, 9·8 mag.
,, June 1, 9·5 ,,
,, ,, 10, 9·7 ,,
,, July 15, 9·5 ,,

No. 755. g 11,848. $16^h\ 22^m\ 57^s$ —67° 12′·4 9·0

Kapteyn :—Certainly missing on two pairs of plates.
Cape :—1899, June 22. No star.
,, Sept. 6. ,, ,,
The star C.Z. XVI., 1581 is 8 secs. f. and same declination about.
Washington :—α requires $+8^s·93$ and is thus another observation of g 11,853.

No. 756. Z.C. 1647. $16^h\ 24^m\ 8^s$ —67° 9′·7 8½

Kapteyn :—In this position certainly missing on m. and c. Not contained in *Gilliss's Catalogue*. Double error and identical with Z.C. 1654 ?
Cape :—1898, May 31. No star there.
1900, Mar. 8. ,, ,,

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No. 757. g 11,879. $16^h\ 26^m\ 30^s$ —79° 10′·8 9·5 M.

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, Aug. 4, 9·5 mag.
,, Sept. 1, 9·25 ,,

No. 758. Z.C. 1873. $16^h\ 27^m\ 13^s$ —54° 37′·1 9

Kapteyn :—There are here two stars in Z.C. as follows :—

	h m s	° ′ ″
(9)	16 27 13·4	—54 37 9·0
(8½)	27 16·7	37 9·4

On the plates the former is certainly missing (cannot be covered by the latter).
Cape :—1898, May 31. Only one star there, the latter.
1900, Mar. 23. No star in position queried. See Errata in C.Z.

No. 759. g 11,942. $16^h\ 30^m\ 24^s$ —77° 2′·2 10·0

Kapteyn :—Certainly missing on two pairs of plates (75°, 17^h, and 18°, $16^h\ 30^m$). Also missing on plates 75°, 16^h. There is a star (9·2 mag.) 3′ to the North in C.P.D.
Cape :—1899, Aug. 4. No star.
Washington :—Minute of α doubtful, δ requires +3′ 6″·6 (Is thus in C.P.D. —76° No. 1171.)

No. 760. g 11,955. $16^h\ 32^m\ 9^s$ —78° 10′·2 10·0

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, Aug. 4, 9·6 mag.
,, Sept. 1, 9·1 ,, red, 7.
,, ,, 6, 9·3 ,,

No. 761. Z.C. 2337. $16^h\ 33^m\ 40^s$ —74° 32′·6 9

Kapteyn :—In this position, certainly missing on *m.* and *c.* Error of 1′ in δ, and star identical with Z.C. 2336 ? Divergencies : $0^s{\cdot}2$ and 54″·3.
Cape :—1899, July 22. No star.
,, Sept. 19. ,, ,,
1900, Mar. 23. ,, ,, so bright as $11^m{\cdot}0$ thereabout.

No. 762. Z.C. 2382 $16^h\ 34^m\ 14^s$ —53° 42′·4 9½

Kapteyn :—Missing in four sweeps, on two pairs of plates. Certainly missing on two plates.
Marked with ? in Z.C.
Cape :—1898, May 31. There is no star there, but a 9·6 mag. is N. *f.*, it is C.P.D. —53°,8156.

No. 763. g 11,966. $16^h\ 35^m\ 53^s$ —83° 46′·8 9·5

Kapteyn :—In this position missing on plates 85°, 16^h. There is a star (8·9 mag.) $1^m\ 5^s$ preceding in C.P.D.
Cape :—1899, Aug. 4. Only one star here.
,, ,, 17. Only one star here viz., C.P.D. —83°, 611. It is a double star *h* 4865, mags. 9 and 10, 4″± 310°± (*h*, 2″± 314°±, 1835·4). The Sydney observation of this star in 1872 is in some way erroneous ; there is a pair of stars 20′ S. evidently seen by Mr Russell. Cape M. Obs. 1899 gives the same R.A. as the C.P.D. ($16^h\ 34^m\ 48^s$).
Washington :—α requires —1^m.

No. 764. g 12,140. $16^h\ 44^m\ 50^s$ —72° 22′·5 10·0 M.

Kapteyn :—There is a star (9·0 mag.) 10′ to the South in C.P.D.
Cape :—1899, July 22. No star ; there is a 9·6 mag. at $16^h\ 45^m\ 50^s\pm$ —72° 23′±
Washington :—δ requires —10′.

No. 765. Z.C. 3237. $16^h\ 45^m\ 47^s$ —54° 31′·0 10

Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on two plates.
Cape :—1898, June 1, 9·7 mag.
,, ,, 10, 9·7 ,,
,, Aug. 6, 9·8 ,,
C.P.D. —54° 7903 and 7907 are both double.

No. 766. g 12,158. $16^h\ 45^m\ 49^s$ —67° 1′·0 9

Kapteyn :—Doubtful traces both on *m.* and *c.*
Cape :—1899, June 22, 9·7 mag.
,, ,, 24, 9·9 ,,
,, ,, 27, 9·9 ,,
,, ,, 30, 9·9 ,,
,, July 12, 9·85 ,,
,, ,, 26, 9·85 ,,
,, Sept. 2, 9·9 ,,
,, ,, 26, 9·5 ,,
1900, May 27, 9·9 ,,
The discordance from g's mag. is large.

No. 767. Z.C. 3523. $16^h\ 49^m\ 33^s$ —62° 20′·3 10

Kapteyn :—Very doubtful traces on the plates.
Cape :—1898, June 1, 9·55 mag.
,, ,, 22, 9·55 ,,
,, Aug. 6, 9·6 ,,

No. 768. g 12,285. $16^h\ 56^m\ 35^s$ —77° 54′·9 9·0

Kapteyn :—Certainly missing on plates 80°, $16^h\ 30^m$. Correction of +4 min. in R.A. makes the star identical with g 12,345. Divergencies : $3^m\ 59^s{\cdot}70$ and 2″·1.
Cape :—1899, Aug. 4. No. star.
,, Sept. 1. ,, ,,
Washington :—Another observation of g 12,345.

No. 769. g 12,316. $16^h\ 58^m\ 37^s$ —77° 38′·2 10·0

Kapteyn :—Certainly missing on plates 80°, $16^h\ 30^m$.
Cape :—1899, Aug. 4. No star. (Error ?)
,, Sept. 1, 9·0 mag. in approx. position.
,, ,, 6, 9·5 ,, orange, 6.
,, ,, 12, 9·2 ,, (red).
,, Oct. 3, 9·25 ,,
1900, Mar. 23, 9·25 ,, red, 6.

No. 770. g 12,314. $16^h\ 59^m\ 1^s$ —79° 35′·0 10·0

Kapteyn :—Extremely doubtful traces of a star on both plates.
Cape :—1899, Aug. 4. 9·6 mag. in approx. position.

No. 771. g 12,347. $16^h\ 59^m\ 22^s$ —65° 56′·3 10·0

Kapteyn :—Missing in four sweeps on two pairs of plates. There is a star (9·9 mag.) 50 secs. preceding in C.P.D.
Cape :—1899, June 22, and Sept. 12. No star.
Washington :—α requires —50 secs.

No. 772. G. 23,172. $17^h\ 0^m\ 16^s$ —59° 55′·4 8½

Kapteyn :—In Cordoba mag. estimated 9·5, 9·5, 7·5. 8·5. On *m.* mag. = 9·7, on *c.* mag, = 9·4. On third plate there is a defect in the film, which is probably the reason that the star is invisible here. Variable ?

Cape :—1898, June 1, 9·1 mag., reddish.
,, ,, 6, 9·1 ,,
,, ,, 22, 9·2 ,,
,, ,, 30, 9·1 ,,
,, Aug. 4, 9·2 ,,
,, Sept. 5, 9·25 ,,
,, ,, 24, 9·0 ,,
,, Oct. 12, 9·1 ,,
,, Nov. 12, 9·1 ,,
1899, April 23, 9·2 ,,
,, May 11, 9·1 ,,

No. 773. g 12,359. $17^h\ 0^m\ 28^s$ —66° 33′·8 9·5 M.

Kapteyn :—Missing in four sweeps on two pairs of plates.
Cape :—1899, June 22, 9·3 mag.
,, July 1, 9·1 ,,
,, ,, 26, 9·3 ,,

No. 774. Z.C. 54. $17^h\ 0^m\ 43^s$ —53° 46′·9 10

Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on two plates. Marked with ? in Z.C.
Cape :—1898, June 1. No star there.
,, Aug. 4. ,, ,, ,,

No. 775. g 12,376. $17^h\ 1^m\ 43^s$ —66° 28′·7 9·5

Kapteyn :—Missing in four sweeps on two pairs of plates.
Cape :—1899, June 22, 9·2 mag.
,, July 1, 9·2 ,,
,, ,, 26, 9·2 ,,

No. 776. g 12,378. $17^h\ 2^m\ 19^s$ —71° 48′·5 8·5

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, June 24. There is a 10·5 mag. star near the position, perhaps a little *f.* No star = 9·5 mag. (or brighter) near position.
Washington :—Another observation of g 12,485.

No. 777. g 12,383. $17^h\ 2^m\ 29^s$ —69° 8′·4 10·0

Kapteyn :—There is a star (9·0 mag.) 50 secs. following in C.P.D.
Cape :—1899, June 24. No star.
Washington :—α requires $+47^s{\cdot}67$.

No. 778. g 12,351. $17^h\ 3^m\ 41^s$ —84° 1′·3 10·0

Kapteyn :—Certainly missing on two pairs of plates 85°, 16^h, and 85°, 18^h).
Cape :—1899, Aug. 4. No star.
Washington :—δ requires +4′ 45″·6. (Is thus = C.P.D. —83° No 626.)

No. 779. g 12,403. $17^h\ 4^m\ 56^s$ —75° 54′·0 9·5

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, July 22, 9·5 mag.
,, Sept. 19, 9·3 ,,

No. 780. ZC. 453. $17^h\ 7^m\ 1^s$ —53° 53′·5 9½

Kapteyn :—Missing in six sweeps on three pairs of plates. Certainly missing on *m.* and *c.* There is another Z.C. star preceding 2 secs., but the two cannot be identical.
Cape :—1898, June 2. Z.C. 453 not seen, but Z.C. 450 is a double star 9·0 and 9·7 mag. *Comes* 5″ S. *pr.* (210° ±).
1900, Mar. 23. Z.C. 453 not seen.

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M.

No. 781. *g* 12,487. $17^h\ 12^m\ 6^s$ —67° 26′·8 10

Kapteyn:—Missing in four sweeps on two pairs of plates.
Cape:—1899, June 24, 9·2 mag. *r* 6.
,, July 12, 9·2 ,,

No. 782. *g* 12,488. $17^h\ 12^m\ 13^s$ —67° 8′·5 9·5

Cape:—1899, June 24, 9·1 mag. (red).
,, July 12, 8·95 ,,

No. 783. G. 23,470. $17^h\ 12^m\ 54^s$ —63° 45′·0 9½

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1898, June 2, 9·8 mag.
,, ,, 6, 9·9 ,,
,, ,, 22, 9·85 ,,

No. 784. *g* 12,501. $17^h\ 13^m\ 33^s$ —71° 36′·7 9·5

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1899, June 24, 10·2 mag.
,, Sept. 24, 10·6 ,,
,, Oct. 6, 10·5 ,,
1900, ,, 20, 10·3 ,,
This star is near the position, but there is a 10th mag. star 15 secs. *pr.* It is not possible to be certain of the identity. Both stars are too faint to be *g's* star.

No. 785. *g* 12,530. $17^h\ 15^m\ 27^s$—70° 51′·3 10·0

Cape:—1899, June 24, 9·1 mag.
,, Sept. ,, 9·2 ,, *r* 7.

No. 786. *g* 12,527. $17^h\ 15^m\ 45^s$—76° 45′·6 10·0

Kapteyn:—Extremely doubtful traces on *m.* and *c.*
Cape:—1899, July 22, 9·6 mag.

No. 787. G. 23,587. $17^h\ 17^m\ 31^s$—78° 29′·8 11·0 (3 obs.)

Kapteyn:—Certainly missing on two pairs of plates (80°, $16^h\ 30^m$, and 80°, $18^h\ 0^m$). Also missing in *g*.
Cape:—1899, Aug. 16. There is a 9·7 mag. at about $17^h\ 17^m\ 24^s$. Too faint to be observed with meridian-circle.

No. 788. Z.C. 1204. $17^h\ 17^m\ 47^s$—61° 7′·2 9½

Kapteyn:—Missing in four sweeps on two pairs of plates. Certainly missing on *m.* and *c.*
Cape:—1898, June 6. No star seen.
,, ,, 22. No star there.
,, July 8. ,, ,, ,,
1900, May 6. ,, ,,
See Errata in C.Z.

No. 789. *g* 12,552. $17^h\ 18^m\ 3^s$—78° 40′·1 10·0

Kapteyn:—In this position certainly missing on two pairs of plates (80°, $16^h\ 30^m$ and 80°, $18^h\ 0^m$). There is a star both in C.P.D. and *g* at δ = 40′·6.
Cape:—1899, Aug. 4. No star.
,, 16. No star; a 9·9 ± at $17^h\ 17^m$ ± —78° 38′ ±.
Washington:—Another observation of *g* 12,551.

No. 790. *g* 12,574. $17^h\ 18^m\ 22^s$—66° 45′·7 9·5

Cape:—1899, June 24, 9·4 mag. very close to position given.
,, Sept. 24, 9·4 ,,

No. 791. *g* 12,578. $17^h\ 18^m\ 41^s$—66° 17 ·3 9·5

Cape:—1899, June 24, 9·3 mag.
,, Sept. ,, 9·1 ,,

M.

No. 792. *g* 12,583. $17^h\ 19^m\ 29^s$—68° 27′·2 9·0

Kapteyn:—Certainly missing on *m.* and *c.* In C.P.D. there is a faint star at δ = 35′·6. (Error of two wire intervals in declination?)
Cape:—1899, June 27. No star = 10^m near position.
,, July 1. ,, ,,
Kapteyn's suspicion probably correct, the star at 35′·6 being = 9·0 mag., reddish 5.
Washington:—δ requires — 8′ 26″·8.

No. 793. Z.C. 1320. $17^h\ 19^m\ 31^s$—67° 42 ·3 9·5

Kapteyn:—On *c.*, which is a very rich plate, faint traces; on *m.* and third plate certainly missing.
Cape:—1899, June 26, 9·5 mag. about.
1902, Mar. 28, 9·5 ,,

No. 794. *g* 12,602. $17^h\ 20^m\ 42^s$—66° 39′·3 9·5

Cape:—1899, July 18, 9·3 mag.
1902, Mar. 28, 9·3 ,, (reddish).

No. 795. *g* 12,600. $17^h\ 21^m\ 5^s$ —72° 18′·4 8·5

Kapteyn:—Certainly missing on two pairs of plates.
Cape:—1899, July 22. No star.
,, ,, 26. ,, ,,
,, Sept. 2. ,, ,,
Washington:—Another observation of *g* 12,601.

No. 796. *g* 12,618. $17^h\ 21^m\ 39^s$—66° 45′·2 9·5

Cape:—1899, July 18. Mag. 9·3.
1902, Mar. 28. ,, 9·3 (reddish).

No. 797. Z.C. 1494. $17^h\ 22^m\ 1^s$ —53° 27′·6 10

Kapteyn:—Missing in four sweeps on two pairs of plates. Certainly missing on *m.* and *c.*
Cape:—1898, June 2. No star there.
1899, May 11. ,, ,, ,, = 10·5 mag. or brighter.

No. 798. *g* 12,650. $17^h\ 24^m\ 59^s$ —71° 53′·4 10

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1899, July 18. 9·5 mag.

No. 799. *g* 12,656. $17^h\ 25^m\ 1^s$ —66° 12′·5 9·0

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1899, July 18. 9·0 mag.
1902, Mar. 29. 9·3 ,, (red.)

No. 800. *g* 12,651. $17^h\ 26^m\ 18^s$ —79° 13′·0 9·5

Kapteyn:—Certainly missing on two pairs of plates. (80°, $16^h\ 30^m$, and 80°, $18^h\ 0^m$).
Cape:—1899, Aug. 4. 9·0 mag.
,, ,, 16. 9·05 ,,
,, Sept. 1. 8·9 ,, yellow.

No. 801. *g* 12,672. $17^h\ 26^m\ 19^s$—66° 34′·4 10·0

Cape:—1899, July 18. 9·4 mag.
1902, Mar. 28. 9·5 ,,

No. 802. *g* 1698. $17^h\ 30^m\ 9^s$ —53° 40′·5 10

Kapteyn:—Error of 4′ in declination, and identical with C.P.D. —53°, 8707 ?
Cape:—1900, May 6. No star. A cluster is N. *f.*

M.

No. 803. *g* 12,736. $17^h\ 31^m\ 26^s$—67° 37′·2 10·0

Cape:—1899, July 18. 9·0 mag.

No. 804. *g* 12,746 (3 obs.). $17^h\ 33^m\ 9^s$ —75° 54′·2 9·7

Cape:—1900, May 20. 9·1 mag. (red).
,, June 20. 9·3 ,,

No. 805. *g* 12,753. $17^h\ 34^m\ 3^s$ —76° 48′·8 9·5

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1899, July 22. 9·1 mag.
,, Sept. 24. 9·1 ,, colour 7.
1902, Mar. 29. 9·2 ,,

No. 806. *g* 12,787. $17^h\ 36^m\ 40^s$ —74° 2′·8 10·0

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1899, July 22. No star, several unrecorded 9·5 mag. stars within 7′ or 8′.
Washington:—Error of 20^m. Identical with *g* 12,544.

No. 807. *g* 12,789. $17^h\ 38^m\ 17^s$ —80° 48′·5 9·5

Kapteyn:—Extremely doubtful traces of a star at R.A. $38^m\ 24^s$.
Cape:—1899, Aug. 4. Mag. 9·0, but very doubtful if identified correctly.
,, Sept. 1. Mag. 9·1 approximate position.
1900, Aug. 20. Mag. 9·3 reddish in approximate position.

No. 808. *g* 12,808 $17^h\ 38^m\ 34^s$ —76° 47′·2 10·0

Kapteyn:—Perhaps extremely faint traces on *m.* and *c.*
Cape:—1899, July 22. 9·5 mag.
,, Sept. 24. 9·4 ,,
1902, Mar. 29. 9·6 ,,

No. 809. *g* 12,831 $17^h\ 39^m\ 57^s$ —69° 31′·0 9·2 (2 obs.)

Cape:—1899, July 18. No star.
,, Sept. 26. ,, ,,
1900, Nov. 24. ,, ,,
C.P.D. —69°, No. 2774 which is 15^s *pr* is double, 10 and 10·5 mag., 7″.
Washington:—Identical with *g* 13,503, copied 1^h wrong.

No. 810. *g* 12,851. $17^h\ 41^m\ 50^s$—74° 31′·5 10·0

Kapteyn:—Perhaps extremely faint traces on *m.* and *c.*
Cape:—1899, July 22. 9·0. mag.
,, Sept. 5. ,, ,,

No. 811. *g* 12,874. $17^h\ 43^m\ 14^s$ —66° 42′·8 9·5

Kapteyn:—There is a bright star (9·1 mag.) at δ = 30′·0 in C.P.D. Error of three wire intervals in Gilliss.?
Cape:—1899, July 18. No star.
Washington:—Wire for δ not recorded, reduced for 7.

No. 812. *g* 12,885. $17^h\ 44^m\ 30^s$ —69° 48′·3 9·5

Cape:—1899, July 18. No star.
,, ,, 26. Mag. 9·7 near the position, but the 9·8 mag. = C.P.D. —69° No. 2790 is only 10·5 mag. visually. The observation of July 18 is probably erroneous.
1900, Nov. 24. No star.
Washington:—Identical with *g* 13,537, copied 1^h wrong.

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M.

No. 813. *g* 12,919. $17^h\,49^m\,21^s$ —78° 59′·0 9·5

Kapteyn :—In this position certainly missing on plates. Can the star be identical with one following 12^{secs}·, which is contained both in C.P.D. and in *g* ?

Cape :—1899, Aug. 4. This with *g* 12,924 forms the double star *h* 4988, but *g* 12,919 would seem to require a correction of + 10^{secs}·. If so, we have
1835, 123° 9″·2 *h* 2*n* (180° added).
1851, 126° 8″·0 *g* 1.
1899, 120° ± 7″ ± Innes 1.
Mags. respectively: 9·7 and 9·2, 9·5 and 9·5, and 8·9 and 9·2.

No. 814. $17^h\,50^m\,14^s$ —74° 36′·7
G. 24,383. (7 obs.) 10
g. 12,948. (1 ,,) 10

Kapteyn :—Certainly missing on *m*. *c*., and third plate.

Cape :—1899, July 22, 9·4 mag.
,, Sept. 5, 9·6 ,,

No. 815. *g* 12,956. $17^h\,50^m\,59^s$ —74° 0′·3 8·0

Kapteyn :—Certainly missing on *m*. and *c*. in this position. Double error of 1^m in R.A. and 1 rev. of micrometer (27″·9) in δ, and star identical with *g* 12,946 = Lac. 7456 ?

Cape :—1899, July 22. No star.
,, Sept. 5. ,, ,,

Washington :—Another observation of *g* 12,946.

No. 816. *g* 12,968. $17^h\,51^m\,38^s$ —71° 2′·0 9·0

Kapteyn :—Certainly missing on *m*. and *c*. Error of 6′ in declination, and star identical with *g* 12,967 ? Divergencies : 0^s·09 and 6′ 2″·1.

Cape :—1899, July 18. No star.

Washington :—Another observation of *g* 12,967.

No. 817. *g* 13,031. $17^h\,57^m\,44^s$ —79° 54′·9 9·0

Kapteyn :—Certainly missing on *m*. and *c*. Corr.—2 min., and star identical with *g* 13,004 ? Divergencies : $1^m\,58^s$·9 and 0″·6.

Cape :—1899, Aug. 4. No star there ; there is a 9·7 mag. 1′ S. of the position given.
,, Sept. 5. No star there ; there is a 10th mag. 1′ S. 40 sec. *pr.* position given.

Washington :—Another observation of *g* 13,004.

No. 818. *g* 13,019. $17^h\,57^m\,49^s$ —81° 20′·5 9·0

Kapteyn :—Certainly missing on *m*. and *c*.

Cape :—1899, Aug. 4, 10·0 mag. in approx. position.
,, ,, 16, 10·5 ,, near position.
,, Sept. 1, 10·7 ,, in approx. position.
,, ,, 26, 10·5 ,,
1900, Aug. 20, 11·0 ,, near position. This can hardly be the star, there is a 9·2 mag. about 6^m *pr.* same declination.
,, Nov. 6. No star ; a 9·2 mag. about 3^m *pr.* the position.
1902, Mar. 28. A star 11th mag. very near position.
This star is too faint for *g*'s catalogue.

No. 819. *g* 13,075. $18^h\,1^m\,28^s$ —76° 45′·0 10·0

Kapteyn :—Certainly missing on *m*. and *c*.

Cape :—1899, July 22, 9·5 mag.
,, Sept. 5, 9·6 ,,

M.

No. 820. *g* 13,114. $18^h\,4^m\,4^s$ —72° 35′·5 9·0

Kapteyn :—Certainly missing on *m*. and *c*. Missing on another pair of plates.

Cape :—1899, July 22. Not seen.
,, Sept. 5. No star ; there is an 11·5 mag. very near the position.

Washington :—Another observation of *g* 13,103.

No. 821. *g* 13,110. $18^h\,4^m\,30^s$ —76° 58′·9 9·8
(2 obs.)

Kapteyn :—Certainly missing on *m*. and *c*.

Cape :—1899, July 22, 9·1 mag.
,, Sept. 5, 9·0 ,, in approx. position.

No. 822. *g* 13,145. $18^h\,6^m\,17^s$ —73° 39′·1 9·5

Kapteyn :—Extremely doubtful traces.

Cape :—1899, July 26, 9·1 mag. *y* 4.
,, Sept. 16, 9·1 ,, ,, 4.

No. 823. *g* 13,144. $18^h\,6^m\,35^s$ —75° 53′·7 10·0

Kapteyn :—Certainly missing on *m*. and *c*.

Cape :—1899, July 26, 9·2 approximate position, many stars 9·1 — 9·5 mag. about here, but not in C.P.D.
,, Sept. 5, 9·3 mag. near position ; but field very bare of stars for identification.

No. 824. *g* 13,179. $18^h\,11^m\,6^s$ —78° 39′·8 10·0

Kapteyn :—Certainly missing on *m*. and *c*.

Cape :—1899, Aug. 4. No star, a 10·0 mag. at $18^h\,10^m·6 \pm -78°\,40' \pm$.
,, Sept. 26. No star, a 9·4 mag. at about $18^h\,10^m·0 - 78°\,40'$.

Washington :—*a* requires — 1^m, (and is thus equal to the star seen.)

No. 825. *g* 13,178. $18^h\,11^m\,44^s$—81° 5′·4 10·0
(2 obs.)

Kapteyn :—Certainly missing on *m*. and *c*.

Cape :—1899, Aug. 4, 9·6 mag. in approximate position.
,, Sept. 26, 9·5 mag. in approximate position.

No. 826. Z.C. 823. $18^h\,12^m\,31^s$ —57° 35′·7 9

Kapteyn :—Certainly missing on *m*. and *c*. Marked with ? in Z.C. There is a faint star (9·8 mag.) in C.P.D. at δ = 45′·7.

Cape :—1900, May 20. No star there. A faint pair 10^m and 10^m, 10″ is at about $18^h\,12^m\,50^s$ — 57° 36′.

No. 827. *g* 13,252. $18^h\,17^m\,54^s$—74° 38′·6 10

Kapteyn :—Certainly missing on *m*. and *c*.

Cape :—1899, July 26, 9·5 mag. in the region, but exact identification with a map is not possible.
,, Sept. 16, 9·5 mag.
1902, Apr. 5, 9·7 ,,

No. 828. *g* 13,298. $18^h\,21^m\,30^s$ —70° 14′·0 9·5

Cape :—1899, July 18. No star.
,, ,, 26. ,, ,,

Washington :—Another observation of *g* 13,297.

No. 829. *g* 13,289. $18^h\,21^m\,40^s$—75° 51′·5 9·5
(2 obs.)

Kapteyn :—Certainly missing on *m*. and *c*. Missing on another pair of plates.

Cape :—1899, July 26, 9·2 mag.
,, Sept. 16, 9·2 ,,
1902, Apr. 5, 9·2 ,, not markedly red.

M.

No. 830. *g* 13,319. $18^h\,24^m\,3^s$ —73° 43′·8 9·5

Kapteyn :—Certainly missing on *m*. and *c*.

Cape :—1899, July 26, 9·2 mag.
,, Sept. 16, 9·2 ,,
1902, Apr. 5, 9·4 ,,

No. 831. *g* 13,330. $18^h\,26^m\,18^s$ —80° 50′·7 9·8
(2 obs.)

Kapteyn :—Certainly missing on *m*. and *c*.

Cape :—1899, Aug. 4, 9·7 mag.

No. 832. *g* 13,383. $18^h\,28^m\,24^s$ —65° 49′·1 9·0

Kapteyn :—Extremely doubtful traces on both *m*. and *c*.

Cape :—1899, July 18, 9·2 mag.
1902, Apr. 5, 9·5 ,,
,, May 1, 9·25 ,,

No. 833. $18^h\,32^m\,32^s$ —70° 11′·2
Z.C. 1898. 9
g 13,423. 10

Kapteyn :—Perhaps extremely doubtful traces on both *m*. and *c*.

Cape :—1899, July 18, 9·2 mag. *y* 4.

No. 834. Z.C. 1940. $18^h\,33^m\,19^s$ —59° 47′·6 9½

Kapteyn :—Certainly missing on *m*. and *c*.

Cape :—1898, Aug. 13. No star except the 10^m in C.P.D. about 1′ S. of position.
,, Sept. 5. No star.
1900, May 20. No star.

No. 835. *g* 13,445. $18^h\,34^m\,17^s$ —70° 12′·3 9·5

Kapteyn :—In this position certainly missing on *m*. and *c*. Probably correction + 1 min. in R.A., and star identical with *g* 13,452.
Divergencies : 59^s·3 and 2″·0.

Cape :—1899, July 18. No star.

Washington :—Another obs. of *g* 13,452.

No. 836. $18^h\,36^m\,36^s$ —66° 59′·4
Z.C. 2106. 9½
g 13,470. 10

Kapteyn :—Certainly missing on *m*. and *c*.

Cape :—1898, June 2, 9·15 mag.
,, ,, 22, 9·1 ,,
1899, July 18, 9·0 ,,
,, ,, 26, 9·0 ,,
,, Sept. 25, 9·1 ,,
1900, May 20, 9·2 ,,
,, June 20, 9·2 ,,
1902, Apr. 5, 9·0 ,,
To reduce to Z.C. scale of mags. add 0·5.

No. 837. *g* 13,514. $18^h\,40^m\,49^s$ —65° 49′·4 10

Cape :—1899, July 18. No star so bright as 9·5 mag., probably no star at all in position identification difficult.
,, July 26. Identification very difficult, many faint stars about in a region with no bright stars, *a* 10^m near the position = 11 *g*.

Washington :—*a* required —3^m (Even so, not in C.P.D.)

Cape :—1900, Aug. 7, 9·5 mag. in new position.

No. 838. *g* 13,523. $18^h\,42^m\,13^s$ —66° 58′·9 10

Cape :—1899, July 18, 9·5 mag.
,, ,, 26, 9·3 ,,
1900, May 20, 9·2 ,,

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M.

No. 839. Z.C. 2437. $18^h\,43^m\,26^s$ —71° 12′·9 9

Kapteyn :—Perhaps extremely doubtful traces on both *m.* and *c.*
Cape :—1899, July 18, 9·0 mag.
,, ,, 26, 9·2 ,, there or at least near the position.
,, Sept. 16, 9·0 ,, in apx. position.

No. 840. *g* 13,562. $18^h\,46^m\,57^s$ —71° 38′·1 10

Kapteyn :—Certainly missing on *m.* and *c.* There is a star (9·6 mag.) 5′ south in C.P.D.
Cape :—1899, July 18, 9·0 mag.
,, ,, 26, 9·2 ,,
,, Sept. 16, 9·3 ,,

No. 841. *g* 13,595. $18^h\,49^m\,6^s$ —66° 11′·7 9·2 (2 obs.)

Cape :—1899, July 18, 9·1 mag.

No. 842. $18^h\,50^m\,14^s$ —70° 21′·0 9·5
g 13,607. (2 obs.)

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, July 18, 9·5 mag.

No 843. *g* 13,618. $18^h\,51^m\,1^s$ —66° 25′·5 10

Cape :—1899, July 18, 9·3 mag.

No. 844. g 1770. $18^h\,51^m\,56^s$ —57° 4′·0 7·5? (1 obs.)

No. 845. *g* 13,662. $18^h\,55^m\,38^s$ —67° 49′·4 10·0

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, July 18, 9·3 mag.
,, Sept. 16, 9·5 ,,

No. 846. G. 26,079. $18^h\,56^m\,13^s$—62° 19′·9 8

Kapteyn :—Certainly missing on *m.* and *c.* In G. 1 obs. Probably identical with G. 26,067 (which is 23 secs preceding).
Cape :—Due to misprint, Kapteyn's suspicion correct. See A.N. No. 3427.

No. 847. *g* 13,667. $18^h\,56^m\,15^s$—67° 29′·4 10·0

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, July 18. No star.
Washington :—Another observation of *g* 13,668.

No. 848. *g* 13,682. $18^h\,57^m\,23^s$ —66° 7′·6 10·0

Kapteyn :—Missing in four sweeps on two pairs of plates.
Cape :—1899, July 18, 9·6 mag.

No. 849. *g* 13,683. $18^h\,58^m\,20^s$ —75° 8′·3 9·5

Kapteyn :—Error of one wire interval in δ, and star identical with *g* 13,684? (Comp. Gilliss's Introd., p. xlvii.).
Cape :—1899, July 26. No star so bright as 10 mag. near positon.
Washington :—Another observation of *g* 13,684.

No. 850. *g* 13,696. $18^h\,59^m\,4^s$ —67° 24′·1 10

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, July 18, 9·3 mag.
,, Sept. 16, 9·2 ,,
C.P.D. —67°, 3620 does not exist, there is an 11·0^m about 5 secs. *f.* the position.

M.

No. 851. *g* 13,707. $19^h\,0^m\,17^s$ —71° 21′·4 10

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, July 18. Is double 9·5 mag. and 10·0 mag. *comes pr.* 10″ ±.

No. 852. Z.C. 84. $19^h\,1^m\,57^s$ —57° 49′·9 9½

Kapteyn :—Missing in six sweeps on three pairs of plates. Certainly missing on four plates. Marked with ? in Z.C.
Cape :—1898, June 6. No star there.

No. 853. *g* 13,725. $19^h\,2^m\,3^s$ —70° 15′·4 9·5

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, July 18, 9·0 mag.

No. 854. *g* 13,735 $19^h\,2^m\,49^s$ —70° 13′·0 10·0

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, July 18. 9·3 mag.

No. 855. *g* 13,650. $19^h\,3^m\,17^s$ —87° 2′·1 9·5

Kapteyn :—Certainly missing on plates 85°, 20^h.
Cape :—1899, Aug. 7. No star.
Washington :—Identical with *g* 13,648.

No. 856. *g* 13,745. $19^h\,3^m\,45^s$ —68° 13′·4 10·0

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, July 18 and Sept. 16. No star.
Washington :—Record straight, three wires in *a.*
Re-examined :—Cape, 1900, Aug. 7. No star; a 10th mag. is 6½′ S. of the position.

No. 857. *g* 13,744. $19^h\,3^m\,47^s$ –70° 18′·9 11·0

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1899, July 18, 9·4 mag.

No. 858. *g* 13,718. $19^h\,4^m\,52^s$ —83° 54′·5 9·5

Kapteyn :—Extremely doubtful traces on plates 85°, 20^h.
Cape :—1899, Aug. 7, 9·5 mag. red 7.
,, Sept. 16, 9·0 ,,

No. 859. *g* 13,850. $19^h\,12^m\,27^s$ –65° 48′·0 9·5

Cape :—1899, July 18, 9·0 mag.

No. 860. *g* 13,851. $19^h\,13^m\,2^s$ —72° 33′·3 9·5

Kapteyn :—Missing in eight sweeps on four pairs of plates.
Cape :—1899, July 26. No star.
,, ,, 27. ,, ,,
Washington :—Another observation of *g* 13,736.

No. 861. *g* 13,863. $19^h\,13^m\,22^s$ –67° 26′·1 9·8 (2 obs.)

Cape :—1899, July 18, 8·9 mag. The star C.P.D. —67° 3643 is a neat double, 9·5 mag. and 9·7 mag., 3″, 30° ±.
1900, ,, 6, 9·0 mag.

No. 862. *g* 13,912. $19^h\,17^m\,7^s$ —67° 32′·8 11·0

Cape :—1899, July 18, 9·5 mag.
Close to a bright star, mag. 7·9 colour 4.
1900, July 6, 9·4 mag.

M.

No. 863. *g* 14,000. $19^h\,25^m\,41^s$ —66° 46′·7 10·0

Cape :—1899, July 18, 9·5 mag.

No. 864. Z.C. 1343. $19^h\,31^m\,14^s$ —64° 22′·0 9½.

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1898, Oct. 7, 9·6 mag. in approximate position a very blank region, comparison star, =9·2 mag. is 23′ S., a little *pr.*
,, Oct. 17, 9·1 mag.
,, Nov. 29, [9·4] ,,
1899, May 27, 9·3 ,, in approximate position.

No. 865. *g* 14,092. $19^h\,33^m\,10^s$ —65° 45′·3 9·5

Kapteyn :—In this position certainly missing on *m.* and *c.* There is a star (9·5 mag.) 41 sec. following. Probably error of one wire interval in Gilliss.
Cape :—1899, July 18. No star.
Washington :—Record straight, two wires in *a.*
Cape :—1902, May 1. Re-examined, only the two stars C.P.D. —65° No. 3818 and 3820 seen; difference of R.A. =47^s·5.

No. 866. *g* 14,141. $19^h\,38^m\,9^s$ —74° 1′·1 10·0

Kapteyn :—There is a star in C.P.D. as follows: (9·3 mag.) $38^m\,10^s·5$ —74° 13′·9. Error of 3 wire intervals in declination?
Cape :—1899, July 27. No star.
Washington :—δ requires —13′.

No 867. *g* 14,201. $19^h\,42^m\,51^s$ –67° 19′·9 10·0

Cape :—1899, July 18. There is a 9·5 mag. star 3 secs. *pr.* position given.

No. 868. *g* 14,187. $19^h\,43^m\,35^s$ —81° 34′·2 10·0

Kapteyn :—Certainly missing on *m.* and *c.* Also missing on rejected plates.
Cape :—1899, Aug. 4. No star.
Washington :—*a* requires + 1^m. (This agrees with C.P.D.—81° No. 878 in *a* but a further correction of — 4′·2 is required in δ if it is the same star.)

No. 869. *g* 14,212. $19^h\,43^m\,43^s$—65° 52′·6 10·0

Cape :—1899, July 18, 9·5 mag.

No. 870. *g* 14,224. $19^h\,45^m\,59^s$ —76° 1′·8 9·5

Cape :—1899, Dec. 7. Not seen.
,, ,, 10. No star as bright as 10 mag. seen.
1899, May 27. Seen? 10 mag.
,, June 15. No star.

No. 871. *g* 14,230. $19^h\,46^m\,24^s$—76° 14′·0 10·0

Cape :—1898, Dec. 7. Not seen.
,, ,, 10. No star so bright as 10^m seen.
1899, May 27. No star.
,, June 15. ,, ,,

No. 872. *g* 14,297. $19^h\,51^m\,49^s$ —65° 58′·7 9·5

Kapteyn :—Missing in four sweeps on *m.* and *c.*
Cape :—1899, July 18, 9·0 mag.
,, Sept. 27, 9·4 ,,
,, Oct. 22, 9·4 ,,

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M.

No. 873. Z.C. 2155. $19^h\ 52^m\ 21^s$ —63° 12′·8 9½

Kapteyn :—Certainly missing on *m*. Doubtful traces on *c*.
Cape :—1898, June 6, 9·0 mag. ±.
,, ,, 30, 9·0 ,,

No. 874. *g* 14,241. $19^h\ 53^m\ 19^s$ —86° 41′·6 9·9 (5 obs.)

Kapteyn :—Extremely doubtful traces on plates 85°, 20^h.
Cape :—1899, Aug. 7, 9·5 mag. (red).
,, Sept. 27, 9·5 ,, *r* 8.

No. 875. *g* 14,321. $19^h\ 53^m\ 22^s$ —65° 50′·6 9·5

Cape :—1899, July 18, 9·3 mag.
,, Sept. 27, 9·3 ,,

No. 876. *g* 14,350. $19^h\ 55^m\ 33^s$ —67° 41′·8 9·5

Kapteyn :—Certainly missing on *m*. and *c*.
Cape :—1899, July 18, 9·1 mag. *y* 4.

No. 877. *g* 14,357. $19^h\ 56^m\ 7^s$ —66° 10′·1 9·5

Cape :—1899, July 18, 9·3 mag.

No. 878. *g* 14,362. $19^h\ 56^m\ 26^s$ —66° 44′·8 9·5

Cape :—1899, July 18, 9·3 mag.

No. 879. *g* 14,288. $19^h\ 58^m\ 14^s$ —86° 41′·4 10·0

Cape :—1899, Aug. 7. No star.
Washington :—Recorded 5^m too late, another observation of *g* 14,241.
See No. 874.

No. 880. *g* 14,371. $20^h\ 0^m\ 38^s$ —83° 37′·2 9·5

Kapteyn :—Extremely doubtful traces on plates 85°, 20^h.
Cape :—1899, Aug. 7, 9·5 mag.

No. 881. *g* 14,406. $20^h\ 1^m\ 10^s$ —65° 48′·6 9·5

Cape :—1899, July 18, 9·3 mag. approximate position.

No. 882. *g* 14,409. $20^h\ 1^m\ 25^s$ —66° 14′·7 9·8 (2 obs.).

Cape :—1899, July 18, 9·5 mag. approximate position.

No. 883. *g* 14,411. $20^h\ 1^m\ 43^s$ —67° 45′·5 9·2 (2 obs.)

Kapteyn :—Certainly missing on *m*. and *c*.
Cape :—1899, July 18, 9·5 mag.
,, Sept. 12, 9·1 ,,
C.P.D.—67° 3717 is double 9 and 9·5, 3″, 170°.

No. 884. *g* 14,415. $20^h\ 2^m\ 10^s$ —69° 23′·6 10·0

Kapteyn :—Certainly missing on *m*. and *c*.
Cape :—1899, July 18, 9·5 mag. *y* 6.

No. 885. Z.C. 122. $20^h\ 3^m\ 21^s$ —62° 38′·1 9½

Kapteyn :—Extremely doubtful traces on the plates.
Cape :—1898, June 6, 9·0 mag. ±.
,, ,, 30, 9·0 ,,

No. 886. *g* 14,434. $20^h\ 4^m\ 15^s$ —68° 6′·4 10·0

Kapteyn :—Certainly missing on *m*. and *c*.
Cape :—1899, Aug. 7, 9·7 mag. approximate position.
,, Sept. 12, 9·4 ,, brightest of three in a group.

M.

No. 887. *g* 14,468. $20^h\ 7^m\ 15^s$ —66° 13′·5 10·0

Cape :—1899, Aug. 7, 9·5 mag.
,, Sept. 12, 9·7 ,,

No. 888. *g* 14,479. $20^h\ 8^m\ 34^s$ —68° 22′·6 9·5

Kapteyn :—Certainly missing on *m*. and *c*.
Cape :—1899, Aug. 7, 9·2 mag. approximate position.
,, ,, 12, 9·0 ,,

No. 889. *g* 14,498. $20^h\ 10^m\ 4^s$ —67° 43′·8 10·0

Kapteyn :—Certainly missing on *m*. and *c*.
Cape :—1899, Aug. 7, 9·2 mag.
,, Sept. 12, 9·3 ,,

No. 890. *g* 14,512. $20^h\ 10^m\ 47^s$ —66° 17′·0 10·0

Cape :—1899, Aug. 7, 9·5 mag.
,, Sept. 12, 9·7 ,,

No. 891. *g* 14,551. $20^h\ 14^m\ 32^s$ —67° 26′·0 9·5

Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on 70°, $20^h\ 15^m$.
Cape :—1899, Aug. 7, 9·1 mag.
,, Sept. 12, 9·1 ,, (apx. position).

No. 892. *g* 14,552. $20^h\ 14^m\ 38^s$ —66° 15′·1 10·0

Kapteyn :—Probably error of 5 secs in R.A. and star identical with *g* 14,554. Divergencies :—$5^s{\cdot}0$ and 0″·0.
Cape :—1899, Aug. 7, 9·3. See Note to No. 893.
,, Sept. 12, 9·25.

No. 893. *g* 14,559. $20^h\ 14^m\ 59^s$ —66° 14′·9 9·5

Cape :—1899, Aug. 7, 8·9 mag.
,, Sept. 12, 8·9 ,,
g 14,554, mag. 9·2 is situated between Nos. 892 and 893, and does not differ appreciably in hue from them. Mag. 9·2 visual, 9·5 C.P.D.

No. 894. *g* 14,562. $20^h\ 15^m\ 27^s$ —67° 24′·9 9·5

Kapteyn :—Certainly missing on plates 70°, $20^h\ 15^m$.
Cape :—1899, Aug. 7, 9·2 mag.
,, Sept. 12, 9·2 ,,

No. 895. *g* 14,555. $20^h\ 17^m\ 1^s$ —81° 56′·7 9·5

Kapteyn :—Certainly missing on plates 80°, $21^h\ 0^m$. Also missing on rejected plates (80°, $21^h\ 0^m$).
Cape :—1899, Aug. 4. No star.
Washington :—Another observation of *g* 14,535.

No. 896. *g* 14,585. $20^h\ 17^m\ 48^s$ —66° 28′·8 10·0

Kapteyn :—Missing in four sweeps on two pairs of plates.
Cape :—1899, Aug. 7, 9·4 mag.
,, Sept. 12, 9·4 ,,

No. 897 *g* 14,604. $20^h\ 19^m\ 0^s$ —65° 55′·2 10·0

Kapteyn :—Missing in four sweeps on two pairs of plates.
Cape :—1899, Aug. 7, 9·6 mag.
,, Sept. 12, 9·6 ,,

No. 898. *g* 14,622. $20^h\ 21^m\ 13^s$ —68° 25′·9 10·0

Kapteyn :—Certainly missing on *m*, and *c*.
Cape :—1898, Dec. 2, 9·5 mag. = 10·3 *g*.

M.

No. 899. *g* 14,641. $20^h\ 23^m\ 3^s$ —68° 4′·8 9·5

Kapteyn :—Certainly missing on *m*. and *c*.
Cape :—1898, Dec. 2, 9·7 mag.

No. 900. *g* 14,650. $20^h\ 23^m\ 30^s$ —67° 37′·9 10·0

Kapteyn :—Certainly missing on *m*. and *c*.
Cape :—1898, Dec. 2, 9·7 mag.

No. 901. *g* 14,651. $20^h\ 23^m\ 41^s$ —69° 1′·8 10·0

Kapteyn :—Certainly missing on *m*. and *c*.
Cape :—1898, Dec. 2, 9·9 mag.

No. 902. Z.C. 829. $20^h\ 24^m\ 56^s$ —71° 0′·5 9·0
g 14,665. 9·0

Kapteyn :—Certainly missing on *m*. and *c*.
Cape :—1899, Dec. 2. 8·9 mag. (orange).

No. 903. *g* 14,633. $20^h\ 25^m\ 26^s$ —83° 45′·6 10·0

Kapteyn :—Extremely doubtful traces on plates 85°, 20^h.
Cape :—1899, Aug. 7, 9·5 mag.

No. 904. *g* 14,705. $20^h\ 28^m\ 44^s$ —68° 7′·1 9·5

Kapteyn :—Certainly missing on *m*. and *c*.
Cape 1898, Dec 2, 9·5 mag.

No. 905. *g* 14,726. $20^h\ 31^m\ 4^s$ —67° 20′·8 9·5

Kapteyn :—Certainly missing on plates 70°, $20^h\ 15^m$.
Cape :—1898, Dec. 2, 9·7 mag. (yellow).

No. 906. *g* 14,761. $20^h\ 34^m\ 25^s$ —69° 45′·2 10·0

Kapteyn :—Certainly missing on two pairs of plates.
Cape :—1898, Dec. 2. Not identified.
1899, Dec. 19. Identification difficult. Probably no star there. There is a 9·5 mag. about 1^m in *a f*. the position.
Washington :—Four wires in *a*, one wire reduces 1^m later.

No. 907. *g* 14,766. $20^h\ 34^m\ 57^s$ —70° 29′·8 7·5

Kapteyn :—Certainly missing on two pairs of plates.
Cape :—1898, Dec. 2. No star there.
Washington :—Another observation of *g* 14,676.

No. 908. *g* 14,780. $20^h\ 36^m\ 20^s$ —65° 46′·1 10

Cape :—1899, Dec. 10, 9·5 mag.

No. 909. Z.C. 1259. $20^h\ 38^m\ 38^s$ –59° 41′·4 8

Kapteyn :—Certainly missing in position on *m*., *c*. and three other plates. Identical with G. 28,460 which is $13^s{\cdot}6$ following ?
Cape :—1898, June 6. No star there.
Kapteyn's suspicion correct. See Errata.

No. 910. Z.C. 1437. $20^h\ 43^m\ 51^s$ —60° 5′·8 10

Kapteyn :—Certainly missing on *m*. and *c*.
Cape :—1898, June 8, 9·8 mag. in a curious isolated group of stars.
,, June 30, 10·1 mag.
,, July 9, 10·2 ,,
,, ,, 18, 10·1 ,,
,, Aug. 4, 10 ,,

No. 911. *g* 14,861. $20^h\ 45^m\ 32^s$ —65° 57′·5 9·5

Cape :—1899, Dec. 3, 9·7 mag.

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M.

No. 912. Z.C. 1539. $20^h\ 47^m\ 7^s$ $-54^\circ\ 47'{\cdot}9$ $9\frac{1}{2}$

Kapteyn:—Is contained on the rejected plates, but certainly not on *m.* = S Indi. Limits of mag. 8·4 to < 12·4.

No. 913. *g* 14,840. $20^h\ 47^m\ 28^s$ $-85^\circ\ 28{\cdot}1$ 10·0

Kapteyn:—Certainly missing on two pairs of plates (85°, 20^h, and 85°, 22^h). In *Gilliss's Cat.* there is the footnote, "Minute of R.A. doubtful."
Cape:—1899, Aug. 7. No star, nor hereabouts.
,, Sept. 12. ,, ,,
This might be *g* 14,681 difference about 17^m.

No. 914. *g* 14,915. $20^h\ 50^m\ 24^s$ $-65^\circ\ 44'{\cdot}4$ 9·5

Cape:—1898, Dec. 3, 9·6 mag.
,, ,, 4, 9·6 ,,
1899, June 25, 9·3 ,,
,, Sept. 12, 9·6 ,,

No. 915. *g* 14,929. $20^h\ 52^m\ 19^s$ $-66^\circ\ 31'{\cdot}4$ 9·3
(3 obs.)

Cape:—1898, Dec. 3, 9·5 mag.

No. 916. *g* 14,931. $20^h\ 52^m\ 29^s$ $-67^\circ\ 21'{\cdot}0$ 10·0
(2 obs.)

Kapteyn:—Certainly missing on plates 70°, $21^h\ 0^m$.
Cape:—1898, Dec. 3, 9·6 mag.

No. 917. *g* 14,940. $20^h\ 53^m\ 5^s$ $-65^\circ\ 41'{\cdot}4$ 9·0

Kapteyn:—Certainly missing on four plates.
Cape:—1898, Dec. 3, 9·3 mag., a 9·0 about 5′ N *f.*
,, ,, 4, 9·3 ,,
,, ,, 13, 9·3 ,, ,, ,, ,, ,,
1899, June 25, 9·4 ,,
,, Sept. 12, 9·3 ,,

No. 918. *g* 15,008. $21^h\ 0^m\ 48^s$ $-68^\circ\ 14'{\cdot}3$ 9·5

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1898, Dec. 3, 9·7 mag.

No. 919. *g* 15,028. $21^h\ 3^m\ 32^s$ $-79^\circ\ 41'{\cdot}5$ 10·0

Kapteyn—Certainly missing on *m.* and *c.* Correction of $+3^{min.}$ in R.A., makes star identical with *g* 15,053. Divergencies: 3^m $0^s{\cdot}06$, and 3″·7.
Cape:—1899, Aug. 4. C.P.D. has a star 9·8m and $21^h\ 3^m\ 56^s$ $-79^\circ\ 40'{\cdot}3$ and it is the only star near there.
,, Aug. 16. No star in position given; there is an 11^m at about $21^h\ 4^m\ 20^s$ $-79^\circ\ 41'{\cdot}5$ but this cannot be *g*'s star.
Washington:—Another observation of *g* 15,053.

No. 920. Z.C. 111. $21^h\ 3^m\ 36^s$ $-67^\circ\ 4'{\cdot}7$ 10

Kapteyn:—Certainly missing on *m.*, *c.* and third plate.
Cape:—1898, June 8, 9·8 mag. ±.
,, Oct. 7, 9·9 ,, ±.
,, ,, 22, 9·8 ,,

No. 921. *g* 15,047. $21^h\ 4^m\ 52^s$ $-69^\circ\ 47'{\cdot}5$ 10·0

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1898, Dec. 3. 9·8 mag. in apx. position.

No. 922. g 1850. $21^h\ 9^m\ 1^s$ $-74^\circ\ 40'{\cdot}6$ 9·5

Kapteyn:—Missing on two pairs of plates. Certainly missing on *c.* and *m.* and in *g.*
Cape:—1898, Dec. 3. No star there.

M.

{Nos. 923. *g* 15,107. $21^h\ 10^m 38^s$ $-67^\circ 26'{\cdot}2$ 9·0
and 924. *g* 15,108. $21^h\ 10^m 42^s$ $-67^\circ 26'{\cdot}4$ 10·0

Kapteyn:—In C.P.D. only the former of these. The star has been looked up on five plates, but on no one any trace of duplicity could be detected.
Cape:—These comprise the double star *h* 5255, mags. 8·8 and 10.
1835·6 108° (180° added) 34⅛″ *h.*
1896·8 100° ± 30± Innes.

No. 925. *g* 14,985. $21^h\ 11^m\ 32^s$ $-88^\circ\ 24'{\cdot}3$ 10

Kapteyn:—In this position missing in four sweeps on polar plates. In *Gilliss's Catalogue* there is the following footnote:—"This is probably the same as *g* 15,210, differing two wire intervals in R.A."

No. 926. *g* 15,137. $21^h\ 13^m 34^s$ $-69^\circ\ 26'{\cdot}8$ 10·0

Kapteyn:—Certainly missing on *m.* and *c.* Identical with *g* 15,142? Divergencies: $13^s{\cdot}5$ and 1″·1.
Cape:—1898, Dec. 3. 9·8 mag., but it is much fainter than *g* 15,142, which *g* calls 11 mag. and which is here assumed to be = 9·5 mag.
,, ,, 31. 10·2 mag.

No. 927. *g* 15,153. $21^h\ 14^m\ 39^s$ $-67^\circ\ 2'{\cdot}3$ 9·5

Cape:—1898, Dec. 7, 9·8 mag.
,, ,, 13, 9·75 ,,
,, ,, 31, 9·4 ,,
1899, Jan. 15, 9·6 ,,
,, ,, 24, 9·5 ,,

No. 928. *g* 15,187. $21^h\ 17^m\ 29^s$ $-69^\circ\ 30'{\cdot}8$ 10·0

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1899, Dec. 3. 9·7 mag. = 10 *g.*
,, ,, 31. 9·9 ,,

No. 929. G. 29,507. $21^h 25^m 58^s$ $-83^\circ\ 20'{\cdot}6$ 10·0
(4 obs.)

Kapteyn:—Certainly missing on five plates 85° 22′. Gould identifies with *p* 7029. (Position reduced to 1875, $21^h\ 27^m\ 18^s$ -83° 17′·8).
Cape:—1899, Aug. 7. 9·9 mag. in position. No star in position of *p.* 7029.

No. 930. $21^h\ 36^m\ 24^s$ $-65^\circ\ 52'{\cdot}8$
Z.C. 1131. (2 obs.) 9·5
g 15,358. 9·0

Kapteyn:—Certainly missing on *m.*, *c.* and 3rd plate.
Cape:—1898, June 18. 9·0 mag., *r* 8.
,, ,, 30. 9·1 ,, *r* 7.
,, Sept. 14. 9·5 ,, orange.
,, ,, 21. 9·6 ,, *r* 7·5.
,, Oct. 22. 9·0 ,, *r* 7.
,, Nov. 1. 9·0 ,, *r* 7.
,, ,, 12. 9·0 ,, *r* 6.
,, ,, 29. 8·95 ,,
,, Dec. 4. 9·0 ,, *r* 6.
,, ,, 13. 9·1 ,,
,, ,, 17. 9·1 ,, *r* 8.
,, ,, 31. 9·0 ,,
1899, Jan. 24. 9·0 ,,
,, June 22. 9·5 ,, *r* 6.
1899, Sept. 12–1900, Jan. 4.
Thirty one additional observations give:—
Mean = 9·0 mag., red 7·7.
Extreme range:—8·7 mag. once to 9·4 mag. once. No certain variation of mag.
(C.Z. 1112 has been taken = 9·2 mag.).

M.

No. 931. *g* 15,450. $21^h\ 44^m\ 38^s$ $-69^\circ\ 35'{\cdot}2$ 10·5

Cape:—1898, Dec. 7, 9·9 mag. (red) = 10·5 *g.*

No. 932. Z.C. 1426. $21^h\ 45^m\ 47^s$ $-54^\circ\ 59'{\cdot}5$ $9\frac{1}{2}$

Kapteyn:—Missing in eight sweeps on two pairs of plates. Certainly missing on *c.* On *m.* there is a star-like speck just in this position. If a star, then mag. = 9·0, and star variable.
Cape:—
1898, July 9. No star. 1899, Sept. 18. No star.
,, ,, 20. ,, ,, ,, ,, 19. ,, ,,
,, Nov. 19. ,, ,,

No. 933. *g* 15,474. $21^h\ 47^m\ 53^s$ $-67^\circ\ 24'{\cdot}3$ 10·0

Cape:—1898, Dec. 10. No star. A 9·7 mag. is *pr.* the position $49^{secs.}$ and 1′ S. ±.
Washington:—Record confused, two wires in *a.*

No. 934. *g* 15,480. $21^h\ 48^m\ 11^s$ $-69^\circ\ 48'{\cdot}1$ 10·0
(2 obs.)

Cape:—1898, Dec. 7. 10 mag. = 10·5 mag. *g.*

No. 935. *g* 15,623. $22^h\ 3^m\ 10^s$ $-80^\circ\ 50'{\cdot}9$ 9·9

Kapteyn:—In this position certainly missing on *m.* and *c.* In C.P.D. there is a star $1^{min.}$ following.
Cape:—1899, Aug. 4. No star.
,, ,, 27. ,, ,,
R.A. of C.P.D. star correct, mag. = 8·7.
Washington:—*a* requires + 1^m.

No. 936. *g* 15,693. $22^h\ 10^m\ 5^s$ $-74^\circ\ 52'{\cdot}8$ 10·0
(2 obs.)

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1898, Dec. 7. 9·8 mag. ±.

No. 937. *g* 15,695. $22^h\ 10^m\ 14^s$ $-75^\circ\ 56'{\cdot}7$ 10·0

Kapteyn:—Extremely doubtful traces on plates.
Cape:—1899, Dec. 7. 9·8 mag. ±.

No. 938. *g* 15,767. $22^h\ 18^m\ 23^s$ $-69^\circ\ 49'{\cdot}7$ 9·5

Kapteyn:—Correction + $30^{secs.}$ and star identical with *g* 15,777? Divergencies: $30^s{\cdot}4$ and 4″·4.
Cape:—1898, Dec. 7. No star there; there is a 9·8 mag. at about 1^m *f.* 3′ N.
,, ,, 10. A 9·8 mag. N. *f.* the position by 6′.
1899, Jan. 15. No star there; a 10^m star $45^{secs.}$ *f.* 3′ N.
,, ,, 24. No star there.
,, June 25. ,, ,, ,,
Washington:—Another observation of *g* 15,777.

No. 939. *g* 15,768. $22^h\ 18^m\ 40^s$ $-74^\circ\ 45'{\cdot}6$ 10·0

Cape:—1899, Dec. 7. 9·5 mag. = 10 *g* in approximate position.

No. 940. *g* 15,791. $22^h 21^m 50^s$ $-83^\circ 22'{\cdot}2$ 10·0
(2 obs.)

Kapteyn:—Certainly missing on five plates 85°, 22^h.
Cape:—1899, Aug. 7. 9·0 mag. (yellow).
,, Sept. 27. 9·3 ,,

No. 941. $22^h\ 22^m\ 18^s$ $-61^\circ\ 8'{\cdot}8$
G. 30,659. 10
Cape 1860, No. 1082. 11

Kapteyn:—Doubtful traces on plates.
Cape:—1898, July 20, 9·8 mag.
,, Aug. 6, 9·85 ,,

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No. 942. g 15,823. $22^h\,22^m\,38^s$ $-69°\,34'{\cdot}9$ M. 9·5 (2 obs.)

Cape:—1898, Dec. 7. No star.
1899, June 25. ,, ,,
Harkness:—Mistake in copying δ.—66°.
Is thus = C.P.D. — 66°, 3677.

No. 943. g 15,853. $22^h\,26^m\,52^s$ $-84°\,6'{\cdot}9$ 10

Kapteyn:—In this position certainly missing on plates 85°, 22^h. Double error and star identical with g 15,843 ?!
Cape:—1899, Aug. 7. No star in position given.
Washington:—Another observation of g 15,843.

No. 944. $22^h\,27^m\,4^s$ $-67°\,56'{\cdot}0$ var.
G. 30,765.
Z.C. 806.

Kapteyn:—R Indi.
Cape:—See Variable Stars.

No. 945. g 15,886. $22^h\,28^m\,52^s$ $-67°\,41'{\cdot}7$ 10·0

Kapteyn:—Missing in four sweeps, on two pairs of plates.
Cape:—1898, Dec. 7, 9·5 mag. = 10·5 g.
,, ,, 10, 10 ,,
,, ,, 20, 9·8 mag. = 10 g.
1899, Jan. 15, 10 ,,
,, ,, 24, 9·75 ,,
,, June 22, 9·8 ,,

No. 946. Z.C. 1166. $22^h\,38^m\,26^s$ $-77°\,42'{\cdot}5$ 10·0

Kapteyn:—Certainly missing on three pairs of plates (75°, 22^h; 75°, 23^h, and 80°, $22^h\,30^m$). Marked with ? in Z.C.
Cape:—1899, Aug. 4. No star.
,, Sept. 27. ,, ,,

No. 947. g 15,976. $22^h\,39^m\,14^s$ $-77°$ {20'·0 / 20'·5} 9·5

Kapteyn:—Certainly missing (in both positions) on two pairs of plates (75°, 23^h and 80°, $22^h\,30^m$).
Cape:—1899, Aug. 4. No star.
Washington:—δ requires − 2°.
(Is thus equal to C.P.D.—79° No 1214.)

No. 948. Z.C. 1264. $22^h\,41^m\,19^s$ $-76°\,0'{\cdot}1$ 10

Kapteyn:—Marked with ? in Z.C. Certainly missing on m. and c.
Cape:— 1898, Dec. 7 (invisible).

No. 949. g 16,034. $22^h\,46^m\,52^s$ $-84°\,46'{\cdot}6$ 10·0

Kapteyn:—In this position certainly missing on plates 85°, 22^h. Also missing in four sweeps on plates 85°, 0^h. In C.P.D. there is a star 20 secs preceding, which is also in g (with corr. in δ ?).
Cape:—1899, Aug. 7. No star.
Washington:—Another observation of g 16,030.

No. 950. g 16,124. $22^h\,55^m\,5^s$ $-73°\,5'{\cdot}3$ 10·0

Kapteyn:—Certainly doubtful traces on the plates.
Cape:—1898, Dec. 7, 9·5 mag. = 10 g. In a loose aggregation of small stars.

No. 951. g 16,130. $22^h\,55^m\,27^s$ $-73°\,5'{\cdot}7$ M. 11

Kapteyn:—Extremely doubtful traces on the plates.
Cape:—1898, Dec. 7, 9·7 mag. = 10·5 g. In a loose aggregation of small stars.

No. 952. g 16,171. $23^h\,0^m\,20^s$ $-82°\,37'{\cdot}7$ 10·0

Kapteyn:—Extremely doubtful traces on m. (85°, 0^h). On c. (85°, 0^h) and five plates of 85°, 22^h certainly missing. Also certainly missing on plates 80°, 0^h and 80°, 22^h 30^m.
Cape:—1899, Aug. 7, 9·6 mag.

No. 953. Z.C. 42. $23^h\,1^m\,42^s$ $-54°\,30'{\cdot}8$ 10·0

Kapteyn:—Missing in four sweeps on two pairs of plates. Certainly missing on c. and m. Marked with ? in Z.C.
Cape:—1898, July 25. Not seen.
,, Aug. 13. Invisible.
There is a star about 10·5 mag. about 1¾′ S. pr. the position.

No. 954. g 16,231. $23^h\,6^m\,16^s$ $-81°\,21'{\cdot}0$ 10·0 (2 obs.)

Kapteyn:—Extremely doubtful traces on both plates.
Cape:—1899, Aug. 4, 9·6 mag.

No. 955. r 588. $23^h\,9^m\,1^s$ $-68°\,27'{\cdot}6$ 7

Kapteyn:—The precession in R.A. is correct for a declination of 60° 27′. It seems not improbable therefore, that the star is identical with C.P.D.—60°, 7645.
Cape—1898, Dec. 6. No star as bright as 10^m near position given.

No. 956. $23^h\,9^m\,51^s$ $-69°\,26'{\cdot}8$
G. 31,553. (3 obs.) 9½
g 16,283. (2 ,,) 10·0

Kapteyn:—Certainly missing on m. and c.
Cape:—1898, Dec. 6, 9·9 mag., perhaps coloured.
,, ,, 20, 9·9 ,,
1899, Jan. 15, 9·9 ,,
1902, May 27, 9·5 ,, ½^m brighter than star 1′ N. f.

No. 957. g 16,288. $23^h\,10^m\,4^s$ $-70°\,2'{\cdot}0$ 10·0

Kapteyn:—Certainly missing on m. and c.
Cape:—1898, Dec. 6, 10·0 mag.

No. 958. g 16,289. $23^h\,11^m\,20^s$ $-85°\,18'{\cdot}3$ 10·0

Kapteyn:—Certainly missing on plates 85°, 0^h. According to footnote in *Gilliss's Cat.* "Record confused."
Cape:—1899, Aug. 7. 9·6 mag.; if not actually in position given, it is very close to it.

No. 959. g 16,323. $23^h\,15^m\,9^s$ $-75°\,31'{\cdot}8$ 11·0

Kapteyn:—Extremely doubtful traces on the plates.
Cape:—1898, Dec. 7. 9·7 mag., red 8 = 10·7 g in approximate position. Fainter than g 16,316 which is 55^{secs}. pr.

No. 960. g 16,355. $23^h\,19^m\,5^s$ $-69°\,39'{\cdot}5$ 10·0

Kapteyn:—Certainly missing on m. and c.
Cape:—1898, Dec. 6, 9·7 mag. = 10·5 g in aproximate position.
1899, Jan. 24, 9·9 mag. in position given.

No. 961. g 16,383. $23^h\,22^m\,38^s$ $-70°\,28'{\cdot}1$ M. 11·0

Kapteyn:—Certainly missing on m. and c.
Cape:—1898, Dec. 6, 10·3 mag,

No. 962. g 16,409. $23^h\,25^m\,49^s$ $-80°\,12'{\cdot}3$ 10·0

Kapteyn:—Certainly missing on plates 80°, 0^h 0^m.
Cape:—1899, Aug. 4, 9·6 mag.
,, ,, 27, 9·5 ,, approx. position.

No. 963. g 16,411 $23^h\,25^m\,50^s$ $-67°\,49'{\cdot}1$ 9·5

Kapteyn:—Certainly missing on m. and c.
Cape:—1898, Dec. 6, 9·8.

No. 964. Z.C. 773. $23^h\,28^m\,42^s$ $-57°\,5'{\cdot}8$ 10

Kapteyn:—Missing in four sweeps on two pairs of plates. Certainly missing on c. and m.
Cape:—1898, July 25. Not seen.
,, Aug. 6, 10·5 mag. in approximate position.
,, Oct. 22. Not seen; some faint stars near.
,, Nov. 1, 10·5 mag. near position.
Plate 5137, 1899, Mar. No star = 10 mag. there.

No. 965. $23^h\,29^m\,7^s$ $-67°\,45'{\cdot}1$
Z.C. 787. (1 obs.) 9·5
g 16,434. (2 ,,) 9·5

Kapteyn:—Perhaps extremely doubtful traces on both m. and c.
Cape:—1898, Dec. 6, 9·5 mag.

No. 966. $23^h\,29^m\,11^s$ $-70°\,19'{\cdot}0$
Z.C. 790. (1 obs.) 9·5
g 16,435. (1 ,,) 10·0

Kapteyn:—Certainly missing on m. and c.
Cape:—1898, Dec. 6, 9·75 mag.

No. 967. g 16,438. $23^h\,29^m\,31^s$ $-78°\,50'{\cdot}0$ 10·0

Kapteyn:—Certainly missing on plates 80°, 0^h 0^m.
Cape:—1899, Aug. 4. No star.
,, ,, 27. ,, ,,
Washington:—δ requires +3° (and is thus = C.P.D. −75° No. 1790).

No. 968. g 16,457. $23^h\,31^m\,11^s$ $-67°\,42'{\cdot}4$ 10·0

Kapteyn:—Certainly missing on m. and c. Missing on another pair of plates.
Cape:—1898, Dec. 6, 10·0 mag.

No. 969. g 16,460. $23^h\,32^m\,40^s$ $-86°\,6'{\cdot}4$ 10·0

Kapteyn:—Certainly missing on plates 85°, 0^h.
Cape:—1899, Aug. 7, 9 6 mag. in approx. position.
,, ,, 27, 10 ,, ,, ,,
,, Nov. 11, 9·6 ,, ,, ,,

No. 970. g 16,487. $23^h\,34^m\,18^s$ $-84°\,5'{\cdot}6$ 9·0

Kapteyn:—Certainly missing on plates 85°, 0^h.
Cape:—1899, Aug. 7. There is a 10·5 mag. near the position; but within 10′ there are several brighter stars, not in g. This star is rather faint for g.
,, Nov. 11. No star = $9{\cdot}8^m$ or brighter there.

No. 971. g 16,483. $23^h\,34^m\,29^s$ $-86°\,29'{\cdot}5$ 10·0 (2 obs.)

Kapteyn:—Certainly missing on plates 85° 0^h.
Cape:—1899, Aug. 7, 11·0 mag. near position perhaps 2^m (= 2′) pr.
,, Aug. 27, 11·0 mag. near position.
,, Nov. 11, 11± ,, prec. ,,

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M.

No. 972. *g* 16,491. $23^h\ 34^m\ 33^s$—78° 51′·5 10·0

Kapteyn :—Certainly missing on plates 80°, $0^h\ 0^m$. Probably correction $-1^{min.}$ in R.A., and star identical with *g* 16,481. Divergencies: $0^m\ 59^s·6$ and 0″·8.
Cape :—1899, Aug. 4. No star.
,, ,, 27, ,, ,,
Washington :—Another observation of *g* 16,481.

No. 973. *g* 16,495. $23^h\ 35^m\ 12^s$—71° 48′·3 10·0

Kapteyn :—Certainly missing on *m.* and *c.* Missing on another pair of plates.
Cape —1898, Dec. 6, 10·3 mag. = 11·5 *g*.
,, ,, 31. No star equal to 9·5 mag. or 10 *g* near position, some faint stars about.
1899, July 18. No star.
Washington :—*a* requires $+3^m$.
Even so is not in C.P.D. Looked for in new position.
Cape :—1900, Nov. 6. No star.

No. 974. *g* 16,499. $23^h\ 35^m\ 50^s$—71° 21′·2 10·0 (2 obs.)

Kapteyn :—Certainly missing on *m.* and *c.* Missing on another pair of plates.
Cape :—1898, Dec. 6, 10 mag. = 11 *g*.
,, ,, 31, 9·5 ,,
1899, July 18, 9·5 ,,

M.

No. 975. $23^h\ 35^m\ 56^s$—85° 15′·7 10·5
g 16,497 (2 obs.)

Kapteyn :—Certainly missing on plates 85°, 0^h.
Cape :—1899, Aug. 7, 9·8 in approximate position.
,, Nov. 11, 9·8 ,, ,, ,,

No. 976. *g* 16,527. $23^h\ 38^m\ 9^s$—69° 6′·42 10·0 (2 obs.)

Kapteyn :—Certainly missing on *m.* and *c.* Missing on another pair of plates.
Cape :—1898, Dec. 6, 9·9 mag. = 10·5 *g*.

No. 977. *g* 16,548. $23^h\ 40^m\ 49^s$—79° 47′·7 10·0

Kapteyn :—Extremely doubtful traces on plates.
Cape :—1899, Aug. 4, 9·7 mag.

No. 978. Z.C. 1171. $23^h\ 43^m\ 21^s$—73° 23′·9 9·5

Kapteyn :—Certainly missing on *m.* and *c.* Marked with ? in Z.C.
Cape :—1899, Dec. 17. This position is S. *pr.* Z.C. 1177. There is no star there, but there is a 9·9 mag. about 1′ N. *pr.* Z.C. 1177.

M.

No. 979. *g* 16,609. $23^h\ 46^m\ 51^s$—68° 44′·7 10·0

Cape :—1898, Dec. 6, 10 mag. = 10·5 *g*.

No. 980. *g* 16,612. $23^h\ 47^m\ 14^s$—82° 52′·7 11·0

Kapteyn :—Extremely doubtful traces on *m.* On *c.* certainly missing.
Cape :—1899, Aug. 7, 9·6 mag.
,, Nov. 11, 9·3 ,,
,, ,, 17, 9·6 ,,

No. 981. *g* 16,690. $23^h\ 55^m\ 1^s$—68° 38′·3 10·0

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1898, Dec. 6, 9·9 mag.

No. 982. $23^h\ 55^m\ 46^s$—68° 13′·2 10·0
g 16,700. (2 obs.)

Cape :—1898, Dec. 6, 9·5 mag. = 10 *g*.

No. 983. *g* 16,709. $23^h\ 57^m\ 32^s$—66° 33′·1 9·5

Kapteyn :—Correction of 20 secs. and star identical with *g* 16,711 ? Divergencies: $20^s·5$ and 2″·9.
Cape :— 1898, Dec. 7. No star there; the 9·5 mag. = *g* 16,711 seen.
Washington :—Another observation of *g* 16,711.

Additional Observations.

No. 88.	1896, Dec. 30.	9·4 mag., too faint for colour.
89.	,, ,, ,,	No star as bright as 11^m near position.
90.	,, ,, ,,	9·5 mag., colour not noticeable.
121.	1902, Mar. 29.	9·1 ,,
202.	,, May 27.	[9·0] ,,
442.	1897, Feb. 2.	No star there.

SUPPLEMENTARY LIST C.P.D. VOL. III., P. 70.

No. 1. 1898, Dec. 30. No bright star there, a very bare region. On *Carte du Ciel* plate 832 :—No star there.
8. The C.P.D. and *Carte du Ciel* plate 4696 both have a 9·8 mag. star at $7^h\ 29^m\ 49^s$—44° 15′, but it is too faint to render identity probable.
9. *Carte du Ciel* plate 4782 has no star nearer than C.P.D. —49°,1287 = C.Z. VII. No. 2271.

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LIST II.

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RESULTS OF REVISION.

This list contains 8 stars $9^m{\cdot}0$ or brighter in Schönfeld's B.D. missing on the C.P.D. plates. The only stars reobserved here were :—

No. 1. $3^h\ 0^m\ 19^s$ $-19°\ 40'{\cdot}5$ M. 9·0

1897, Nov. 24, 9·8 mag.
,, Dec. 13, 9·6 ,,
,, ,, 18, 9·5 ,,
1898, Jan. 4, 9·6 ,,
,, ,, 21, 9·5 ,,
,, Feb. 8, 9·6 ,,

Mean 9·6 mag.
Perhaps 9·0 is a misprint for 9·6.

No. 2. = T Leporis.
See Variable Stars, Part II.

No. 6. $18^h\ 21^m\ 24^s$ $-20°\ 14'{\cdot}5$ M. 9·0

1897, Sept. 2, 9·3 mag.
,, ,, 14, 9·2 ,,
,, ,, 18, 9·35 ,,
,, Oct. 28, 9·4 ,,
,, ,, 31, 9·25 ,,

Mean 9·3 mag.

No. 7. See List I. No. 202.

The other stars are sufficiently dealt with by Kapteyn in his remarks printed with the list.

LIST II. *bis.*

(C.P.D. VOL. 3. PAGES 72–81.)

STARS 9·0 OR BRIGHTER IN THOME, AND MISSING IN THE C.P.D.

RESULTS OF REVISION.

This list was sent to the Cape Observatory in two parts, the first part covering $\delta - 22°$ to $\delta - 34°$ being received in December 1896, the second from $\delta - 34°$ to $\delta - 42°$ in March 1898.

The method of examination was the same as that adopted for the list of stars occurring in catalogues of precision. But here it was possible in all cases to use the Cor. D.M. as the basis of the maps. Hence, the magnitudes of the Cor. D.M. were adopted for the stars surrounding any star of the list.

At an early stage of the work it was recognized that the Cor. D.M. magnitudes of stars fainter than $8^m{\cdot}7$ or $8^m{\cdot}9$ were too faint, *i.e.*, a star which would have been considered as $9^m{\cdot}5$ would very often be rated $9^m{\cdot}0$ in the Cor. D.M. But for the sake of uniformity with that work, the revision with a few exceptions, conforms to the Cor. D.M. scale.

In this connection, an extract from Dr. Thome's letter of 10th September 1897 may be given :—"I am convinced that our scale of magnitudes between 9 and 10 was too

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restricted, and that the lower limit was $10\frac{1}{4}$ or $10\frac{1}{2}$. The printed 9·7 mag. stars are probably nearly all 10·0, and the 10·0 extends to $10\frac{1}{2}$ or fainter. The 9·0 stars are 9·1 or 9·15 and so on progressively."*

Of the 310 missing stars of the list, 56 are due to misprints or false entries in the Cor. D.M. These were mainly kindly communicated by Dr. Thome.† Variable stars (the greater part already known) account for 9 omissions. Stars more or less coloured amount to 102 in number. One is due to an accidental omission in the C.P.D.

The following table shows the result of the revision on the stars which have been examined which have had no colour noticed, and which are probably not variable :

Cordoba Magnitude.	No.	Magnitude from Cape Revision.										
		8·7.	8·8.	8·9.	9·0.	9·1.	9·2.	9·3.	9·4.	9·5.	9·6.	<9·8 to inv.
>8·7	3	...	...	...	1	1	...	...	...	...	...	1
8·7	8	1	...	...	2	1	1	1	1	1	...	...
8·8	6	...	...	1	1	1	1	1	...	1	...	...
8·9	20	...	...	5	3	2	4	2	2	2	...	0
9·0	106	...	...	1	25	21	14	18	15	6	5	1

It should be mentioned that stars, if only once noted as coloured out of several observations, have nevertheless been counted as coloured.

Even regarding most of the 9·0 mag. stars in this table as equal to $9\frac{1}{4}$, there remain some 20 stars whose non-appearance on the C.P.D. plates is unexplained. These cases will be re-examined at an early date.

In comparing the maps made from the Cor. D.M. with the sky many discrepancies were found, but only in a few cases is attention drawn to them—these cases are stated in the notes appended to observations. The usefulness as well as the vastness of the work undertaken in the Cor. D.M. is so readily acknowledged that it is no detriment to it to say that in many places in the first two parts ($-22°$ to $-41°$), the magnitudes and positions are somewhat rough. In many cases, it would seem that two stars differing over 1′ or 2′ in position, have been combined and treated as one star in the final catalogue.

The colour scale used is given in the introduction to List I. in this volume.

* Since the above was written, Professor Simon Newcomb has published a comparison between the magnitudes of the Harvard Southern Photometry, and those of the first two volumes of the Cor. D.M. (See *Astr. Journal*, No. 507). The following table is founded on Professor Newcomb's data.

Cordoba D.M. mag.	Harvard S.M.P. mag.	Cordoba D.M. mag.	Harvard S.M.P. mag.
7·8	8·0	8·9	9·5
8·0	8·3	9·1	9·8
8·3	8·6	9·3	10·1
8·5	8·9	9·5	10·3
8·7	9·2		

† In the *Ast. Nach.* No. 3784, Dr. Thome published the results of an examination which he had previously sent to the Cape. These results have been incorporated.

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No. 1. $0^h\ 5^m\ 39^s$ $-25°\ 16'$ M. 8·9

Kapteyn :—One rejected obs., −o (10·o mag.).

Cape :—1897,		mag.	col.
	Jan. 2,	9·4	7
,,	,, 29,	8·8	7
,,	Feb. 3,	[8·8]	
,,	,, 4,	[8·9]	
,,	Sept. 25,	8·8	6
,,	Oct. 19,	8·8	6
	Means :	8·93	6·5.

No good comparison stars available.

No. 2. $0^h\ 11^m\ 16^s$ $-25°\ 58'$ 9·0

Kapteyn :—One rejected obs., −o (9·9 mag.).
Cape :—1897, Jan. 15, 9·o mag.
The last batches of the Abney Plates (see *C. P. D.*, vol. I. p. xxii.) were used for zones $-26°{\cdot}5$ and $-31°{\cdot}5$, and are lacking in many of the fainter stars; and the magnitudes of those that are found are estimated too faint, owing, perhaps, to a lack of silver in the preparation of the plates.

No. 3. $0^h\ 13^m\ 56^s$ $-31°\ 43'$ 8·9

Kapteyn :—One rejected obs., −o (10·2).
Looked up on plates :—Faintly visible on four plates, on fifth plate missing.

Cape :—1897,		mag.	1897,		mag.
	Jan. 15,	9·5	Sept.	25,	9·2
,,	,, 22,	9·4	,, Oct.	19,	9·2
,,	,, 29,	9·4	,,	,, 23,	9·3
,,	Feb. 3,	[9·4]	,, Nov.	24,	9·3

Mean : 9·34.

No. 4. $0^h\ 18^m\ 35^s$ $-28°\ 23'{\cdot}3$ 9·0

Kapteyn :—The star was looked up and found, −o (9·9). $\delta = -28°\ 24'{\cdot}0$.
Cape :—1897, Jan. 16, 9·o mag. [orange].

No. 5. $0^h\ 19^m\ 40^s$ $-31°\ 54$ 9·0

Kapteyn :—One rejected obs., −o (10·2).
Looked up on plates :—Faintly visible on four plates, on fifth missing.
Cape :—1897, Jan. 15, 9·o mag. [red].

No. 6. $0^h\ 20^m\ 34^s$ $-26°\ 24'$ 8·7

Kapteyn :—Looked up on plates :—Faint traces on plate 2027 (*m.*); on 2036 (*c.*) certainly missing, which can be explained by the difference of the images on the two plates. On plate 1641 very doubtful traces.

Cape :—1897,		mag.	col.	1898,		mag.
	Jan. 15,	9·2		Jan.	5,	9·1
,,	,, 23,	9·2	[6]	,,	,, 6,	9·2
,,	,, 29,	9·3	[7]	,,	,, 9,	9·1
,,	Feb. 3,	[9·2]		,,	,, 10,	9·1
,,	,, 8,	9·o	twi.	,,	,, 12,	9·o
,,	Sept. 25,	9·o	5	,,	,, 15,	9·15
,,	Oct. 19,	8·95		,,	,, 16,	9·o
,,	,, 23,	8·95		,,	,, 19,	9·2
,,	Dec. 1,	8·95		,,	,, 26,	9·1
,,	,, 30,	9·3		,,	,, 30,	9·2
1898,	Jan. 2,	9·2		,,	Aug. 26,	9·1
,,	,, 4,	9·1				

Means : 9·10 5·7.
Range : 8·95–9·3.

No. 7. $0^h\ 22^m\ 26^s$ $-28°\ 56'$ 9·0

Kapteyn :—Certainly missing.
Cape :—1897, Jan. 16, 9·o mag.

No. 8. $0^h\ 29^m\ 44^s$ $-31°\ 19'$ M. 9·0

Kapteyn :—One rejected obs., −o (10·2).
Plates referred to : — Extremely faint star on three plates; on two other plates certainly missing.
Cape :—1897, Jan. 15, 9·2 mag.

No. 9. $0^h\ 30^m\ 29^s{\cdot}7$ $-31°\ 42'$ 8·9

Kapteyn :—Certainly missing on three plates; on plates 1633 and 1716 faintly visible.
Cape :—1897, Jan. 15, 8·9 mag.

No. 10. $0^h\ 30^m\ 45^s$ $-31°\ 56'$ 8·8

Kapteyn :—Certainly missing on four plates; on plate 1633 faintly visible.
Cape :—1897, Jan. 15, 8·8 mag. [orange].

No. 11. $0^h\ 31^m\ 8^s$ $-31°\ 29'$ 9·0

Kapteyn :—Certainly missing on four plates; on plate 1633 faintly visible.
Cape :—1897, Jan. 15, 9·2 mag.

No. 12. $0^h\ 32^m\ 44^s$ $-31°\ 48'$ 9·0

Kapteyn :—One rejected obs., −o (10·6).
Looked up on plates; on *m.* and *c.* very faint traces; on plate 1633 plainly, and on plate 1716 very faintly, visible.
Cape :—1897, Jan. 15, 9·o mag. orange.

No. 13. $0^h\ 35^m\ 39^s$ $-26°\ 21'$ 9·0

Kapteyn :—The star was looked up on plates and found, −o (10·2).
$\alpha = 0^h\ 35^m\ 39^s{\cdot}7$.
$\delta = -26°\ 20'{\cdot}6$.
Images on *m.* and *c.* show the normal difference.

Cape :—1897,		mag.	col.
	Jan. 16,	8·5	7
,,	,, 29,	8·8	
,,	Feb. 3,	8·7	
,,	Sept. 13,	8·7	
,,	Oct. 19,	8·9	6
,,	,, 23,	8·6	
,,	,, 27,	8·9	
,,	Dec. 4,	8·7	
	Means :	8·73	6·5.

Is in W.Z. :—
1846, Oct. 9, 10 mag.

No. 14. $0^h\ 41^m\ 44^s$ $-26°\ 17'$ 8·9

Kapteyn :—One rejected obs., −o (10·2).
Cape :—1897, Jan. 16, 9·o mag.

No. 15. $0^h\ 43^m\ 58^s$ $-26°\ 22'$ 9·0

Kapteyn :—Looked up on plates :—An extremely faint image on both *m.* and *c.* observed as follows :—
−o (10·2), $0^h\ 43^m\ 59^s{\cdot}0$ $-26°\ 22'{\cdot}4$.
In Cor. D.M. List of Suspected Variables :—

	mag.		mag.
1886, Aug. 26,	9·5	1887, Sept. 12,	8·5
1887, Sept. 11,	8·7	1891, Dec. 4,	9·4

Cape :—1897,		mag.	col.	1898,		mag.
	Jan. 21,	9·2	6	Jan.	21,	9·35
,,	,, 29,	[9·2]		,,	Feb. 8,	9·4
,,	Feb. 4,	9·3	[6]	,,	,, 20,	9·3
,,	Sept. 13,	9·3		,,	May 16,	9·4
,,	Oct. 15,	9·3		,,	Aug. 6,	[9·4]
,,	,, 27,	9·4		,,	Oct. 15,	9·4
,,	Dec. 4,	9·1		,,	Dec. 31,	9·5
,,	,, 17,	9·15		1899,	Feb. 4,	9·1
,,	,, 30,	9·o		,,	Oct. 25,	9·4
1898,	Jan. 6,	9·o		1900,	Jan. 6,	9·4
,,	,, 15,	9·2				

No. 16. $0^h\ 48^m\ 58^s$ $-31°\ 41'$ M. 9·0

Kapteyn :—One rejected obs. −o (10·6).
Cape :—1897, Jan. 21, 9·o mag., no striking colour.

No. 17. $0^h\ 50^m\ 37^s$ $-27°\ 55'$ 9·0

Kapteyn :—Perhaps extremely faint, and uncertain traces on both *m.* and *c.*
Cape :—1897, Jan. 21, 9·o mag., no colour.

No. 18. $0^h\ 51^m\ 15^s$ $-26°\ 53'$ 8·9

Kapteyn :—One rejected obs. −o (10·2).
Cape :—1897, Jan. 21, 8·9 mag., coloured.

No. 19. $0^h\ 51^m\ 19^s$ $-26°\ 37'$ 9·0

Kapteyn :—One rejected obs. −o (10·2).

Cape :—1897,		mag.
	Jan. 21,	8·7 orange.
,,	,, 29,	8·8
,,	Feb. 3,	8·8
,,	Sept. 13,	8·85
,,	Oct. 3,	8·8
,,	,, 19,	8·9
,,	,, 23,	8·8
,,	,, 27,	8·8
	Mean :	8·81.

The scale of the Cor. D.M. for neighbouring stars has, as usual, been adopted.
Independent estimates = 9·3.

No. 20. $1^h\ 5^m\ 39^s$ $-30°\ 47'$ 8·8

Kapteyn :—Certainly missing on both *m.* and *c.*
Chandler :—Variable = 401 U Sculptoris. Suspected by Thome 1892; proved by West. Varies 8·7 to <12·5 mag. Period 280 days±.

No. 21. $1^h\ 11^m\ 37^s$ $-25°\ 24'$ 8·9

Kapteyn :—One rejected obs. −o (10·5).

Cape :—1897,		mag.	col.
	Jan. 22,	9·4	7
,,	,, 29,	9·3	
,,	Feb. 3,	9·4	
,,	,, 15,	(9·4)	
,,	Sept. 13,	9·1	6
,,	Oct. 3,	9·2	
	Means :	9·3	6·5

No. 22. $1^h\ 23^m\ 11^s$ $-23°\ 40'$ 8·9

Kapteyn :—Looked up on plates :—Found as an extremely faint star on both plates :—
−o (9·8) $\alpha = 1^h\ 23^m\ 12^s$ $\delta = -23°\ 40'{\cdot}0$.
Washington Zones, 9·o mag.
Ormond Stone, 9·1 mag.
Cape :—1897, Jan. 22, 9·1 mag. [red].

No. 23. $1^h\ 28^m\ 41^s$ $-31°\ 8'$ 9·0

Kapteyn :—One rejected obs. −1 (10·1).
Looked up on plates :—Perhaps faint traces on both plates.
Cape :—1897, Jan. 22, 9·o mag.

No. 24. $1^h\ 29^m\ 52^s$ $-31°\ 34'$ 8·7

Kapteyn :—One obs. −o (10·1).
Looked up on plates. Extremely faint image on both plates.
Cape :—1897, Jan. 22, 8·7 mag., no colour noticeable.

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No. 25. $1^h\ 31^m\ 47^s$ $-31°\ 15'$ M. 9·0

Kapteyn :—Certainly missing on both plates.
Cape :—1897, Jan. 22, 9·0 mag. [no colour].

No. 26. $1^h\ 36^m\ 11^s$ $-34°\ 40'$ 9·0

Kapteyn :—One rejected obs. −0 (9·9).
In Cor. D.M. List of Suspected Variables.
Cordoba :—8·5, 9·7, 9·7 mag.
Cape :—1898, July 23, 9·5 mag.
,, Aug. 6, 9·5 ,,
,, Sept. 23, [9·4] ,,
,, Oct. 17, 9·2 ,,
,, Dec. 14, 9·4 ,,
1899, Feb. 4, 9·5 ,,

No. 27. $1^h\ 39^m\ 56^s$ $-31°\ 12'$ 9·0

Kapteyn :—On *m.* certainly missing, on *c.* uncertain traces.

	mag.		mag.
Cape —1897, Jan.	22, 9·6	1897, Feb.	15, 9·6
,, ,,	29, 9·6	,, ,,	21, 9·7
,, Feb.	3, 9·6	,, Sept.	13, 9·6
,, ,,	8, 9·6	,, Oct.	4, 9·6

Mean : 9·61.

No. 28. $1^h\ 42^m\ 17^s$ $-41°\ 41'$ 9·0

Kapteyn :—One rejected obs. −0 (10·0).
Cape :—1898, July 23, 9·1 mag.
,, Aug. 8, 9·1 ,,
,, Sept. 5, 9·05 ,,
,, Dec. 14, 9·1 ,, orange 4.

No. 29. $1^h\ 43^m\ 18^s$ $-31°\ 13'$ 9·0

Kapteyn :—One rejected obs. −0 (10·1).
On *m.* certainly missing, on *c.* uncertain traces.

	mag.		mag.
Cape :—1897, Jan.	22, 9·1	1897, Feb.	21, 9·1
,, ,,	29, 9·1	,, Sept.	13, 9·0
,, Feb.	4, 9·2	,, Oct.	4, 8·9
,, ,,	8, 9·0	,, ,,	19, 9·0
,, ,,	15, 9·1		

Mean : 9·05.

No. 30. $2^h\ 19^m\ 50^s$ $-31°\ 22'$ 9·0

Kapteyn :—One rejected obs. −0 (10·4).
Cape :—1897, Jan. 22, 9·0 mag. [white].

No. 31. $2^h\ 23^m\ 40^s$ $-26°\ 39'$ 8·6

Kapteyn :—Certainly missing on four plates.
Chandler :—Variable :—869, R Fornacis. Suspected by Thome 1891 ; proved by West. 8·6 mag. to < 10. Colour 6.
See Variable Stars.

No. 32. $2^h\ 29^m\ 11^s$ $-23°\ 35'$ 9·0

Kapteyn :—Certainly missing on four plates.
Cape :—1897, Jan. 22, 9·0 mag. [red].

No. 33. $2^h\ 38^m\ 53^s$ $-32°\ 14$ 9·0

Kapteyn :—Certainly missing.
Cordoba :—1888, Oct. 26, 9·75 mag.
1889, Dec. 14, 9·25 ,,
Cordoba :—1890, Jan. 15, 9·75 mag.
,, ,, 19, 9·25 ,,
1892, Dec. 9, 9·0 ,,

	mag. col.		mag.
Cape :—1897, Jan.	22, 9·5	1897, Nov.	4, 9·3
,, ,,	29, 9·5	,, ,,	13, 9·4
,, Feb.	2, [9·3]	,, ,,	16, [9·3]
,, ,,	4, 9·7 6	1898, Jan.	4, 9·5
,, ,,	15, [9·7]	,, ,,	6, 9·3
,, ,,	21, [9·6]	,, ,,	15, 9·4
,, ,,	27, [9·6]	,, ,,	19, 9·4
,, Mar.	3, 9·8	,, ,,	21, 9·3
,, ,,	14, 9·9	,, ,,	26, 9·2
,, ,,	22, 9·7	,, Feb.	7, 9·45
,, Sept.	13, 9·6	,, ,,	8, 9·5
,, Oct.	4, 9·4	,, ,,	11, 9·5
,, ,,	19, 9·7	,, ,,	14, 9·6
,, ,,	20, 9·4	,, ,,	18, 9·5
,, ,,	23, 9·5	,, ,,	20, 9·4
,, ,,	27, 9·4	,, Mar.	3, 9·5
,, ,,	31, 9·4	,, ,,	18, 9·4

There are no good comparison stars near, still the range of magnitude shown :—
Cordoba, 9·0 to 9·75.
Cape, 9·2 to 9·9
is in excess of probable errors.
See *Astr. Nach.* Nos. 3426 and 3447.

No. 34. $2^h\ 39^m\ 3^s$ $-27°\ 16'$ M. 9·0

Kapteyn :—One rejected obs. −0 (9·6).
Cape :—1897, Jan. 23, 9·0 mag., orange.

No. 35. $2^h\ 44^m\ 46^s$ $-23°\ 59'·8$ 9·0

Kapteyn :—Certainly missing on *m.*, uncertain traces on *c.*
Cape :—1897, Jan. 23, 9·2 mag., red.

No. 36. $2^h\ 47^m\ 15^s$ $-30°\ 0'$ 9·0

Kapteyn :—One obs. −0 (10·6).
Extremely faint image on both plates.
Cordoba :—1887, Sept. 13, 9·0 mag.
,, Nov. 10, 9·0 ,,
1892, Oct. 12, 9·0 ,,

	mag. col.		mag.
Cape :—1897, Jan.	22, 9·7 6	1897, Sept.	13, 9·55
,, ,,	29, 9·7	,, Oct.	4, 9·4
,, Feb.	2, 9·7	,, ,,	19, 9·5
,, ,,	4, 9·6	,, ,,	23, 9·5
,, ,,	9, [9·0]	,, Nov.	4, 9·5
,, ,,	15, 9·6	1898, Feb.	7, 9·65
,, ,,	27, 9·6	,, Mar.	3, 9·55
,, Mar.	3, 9·65	,, ,,	12, 9·6
,, ,,	14, 9·7	,, ,,	23, 9·6
,, ,,	22, 9·6	,, Oct.	17, 9·5
		1900, Jan.	6, 9·5

Mean : 9·60 (excluding 1897, Feb. 9).
The star in Cor. D.M. 9·7 mag. at $2^h\ 46^m\ 50^s$ $-30°\ 0'·4$ was always invisible during the above observations. The separate Cordoba observations are :—
1887, Sept. 13, 9·75 mag.
,, Nov. 10, *Nil.*
1892, Oct. 12, 9·75 mag.

No. 37. $2^h\ 52^m\ 8^s$ $-23°\ 47'$ 9·0

Kapteyn :—Two obs., −0 (9·8).
Rejected on account of a doubt about its stellar nature.
Cape :—1897, Jan. 15, 8·9 mag., no colour.
The 9·7 mag. star in Cor. D.M. at $2^h\ 51^m\ 47^s$ $-23°\ 53'$, which is also not in the C.P.D., was invisible on this date.

No. 38. $3^h\ 0^m\ 59^s$ $-23°\ 48'$ M. 9·0

Kapteyn :—Certainly missing on three plates.
Ormond Stone :— 9·1 mag.
Washington Zones :— 9·0 ,,
Cape :—1897, Jan. 15, 9·1 ,, [white].

No. 39. $3^h\ 2^m\ 39^s$ $-31°\ 4'$ 9·0

Kapteyn :—Certainly missing on three plates.
Cape :—1898, Aug. 27, 9·2 mag. but an independent estimate would give 9·7 mag.

No. 40. $3^h\ 4^m\ 11^s$ $-30°\ 53'$ 9·0

Kapteyn :—One rejected obs. −0 (10·4).
On *m.* good image ; on *c.* extremely faint. This difference attributable to normal difference of the two plates.
On third plate certainly missing.
Cape :—1897, Jan. 23, 9·0 mag. exactly same mag. and hue as star, closely N. *pr.* viz. :—
Cord. D.M.—30° 1203, mag. 9·0.
C.P.D.—30°, 388 ,, 10·2.
1900, Mar. 16, 9·0 mag.
,, Apr. 3, 9·1 ,,

No. 41. $3^h\ 4^m\ 56^s$ $-30°·54'$ 8·8

Kapteyn :—Certainly missing on both *m.* and *c.* On third plate perhaps traces of a star.
Cape :—1897, Jan. 22, 9·0 mag. no noticeable colour.
1900, Mar, 16, 9·4 ,,
,, Apr. 3, 9·2 ,,

No. 42. $3^h\ 11^m\ 9^s$ $-25°\ 26'$ 8·7

Kapteyn :—Certainly missing on *m.* and *c.* Most probably error in Cor. D.M., and star identical with C.P.D. star 9·2 mag. $3^h\ 11^m\ 20^s·2$ $-25°\ 25'·6$ which is certainly right.
Cape :—There was no star in Cor. D.M. position between 1897, Jan. 30, and 1897, Oct. 4.
C.P.D. star seen, mag. 9·1 (10 obs.).
Cordoba :—Read $19^s·7$.

No. 43. $3^h\ 13^m\ 6^s$ $-35°\ 12'$ 9·0

Kapteyn :—Certainly missing on *m.* and *c.*

	mag.		mag.
Cape :—1898, Mar.	17, 9·95	1898, Apr.	4, 9·9
,, ,,	23, 9·8	,, ,,	14, 9·95
,, ,,	31, 9·75	,, June	8, 9·8

Mean : 9·86 mag.
Due to a misprint in Cor. D.M., the mag. should be 10·0 (obs., twice 10 and 10).

No. 44. $3^h\ 16^m\ 34^s$ $-30°\ 29'$ 8·9

Kapteyn :—Certainly missing on three plates.

	mag.		mag.
Cape :—1897, Jan.	23, 9·8	1897, Apr.	2, 9·7
,, ,,	29, 9·8	,, ,,	3, 9·7
,, Feb.	2, 9·7	,, ,,	7, [9·7]
,, ,,	4, 9·8	,, Oct.	4, 9·85
,, ,,	9, 9·4	,, ,,	19, 9·9
,, ,,	15, 9·4	,, ,,	23, 9·8
,, ,,	21, 9·3	,, Nov.	4, 9·9
,, ,,	23, 9·3	,, ,,	12, 9·8
,, ,,	25, 9·4	,, ,,	24, 9·8
,, ,,	27, 9·5	,, Dec.	2, 9·9
,, Mar.	3, 9·5	,, ,,	14, 9·8
,, ,,	9, 9·8	1898, Jan.	4, 9·8
,, ,,	14, 9·9	,, ,,	21, 9·6
,, ,,	22, 9·7	,, Feb.	8, 9·85
,, ,,	23, 9·4	,, ,,	18, 9·6
,, ,,	30, [9·5]	,, ,,	28, 9·7
,, ,,	31, 9·5		

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This star was thought variable and announced as such:—See *Astr. Nach.* No. 3426—The rather large range of magnitude shown in the earlier observations is due to the poor choice of comparison stars in the small field of the eyepiece then in use, and the star is probably not variable.

The mean of the Cape observations is 9·7 mag.

Cordoba:—1887, Nov. 10, 10 mag.
,, ,, 11, 9·75 ,,
1888, Oct. 3, 9·75 ,,
Misprint for 8·9 read 9·8.

No. 45. $3^h\ 16^m\ 47^s$ $-24°\ 58'$ M. 9·0

Kapteyn:—One rejected obs. −0 (9·6).

	mag.		mag.
Cape:—1897, Jan.	30, [9·6]	1897, Mar. 10,	9·3
,, Feb.	2, 9·5	,, ,, 14,	9·3
,, ,,	4, 9·65	,, ,, 22,	9·6
,, ,,	9, 9·6	,, ,, 23,	9·55
,, ,,	15, 9·3	,, ,, 31,	9·3
,, ,,	21, 9·5	,, Oct. 4,	9·5
,, ,,	23, 9·3	,, ,, 19,	9·3
,, ,,	25, 9·4	,, ,, 23,	9·3
,, Mar.	3, 9·4	,, Nov. 4,	9·4

Mean: 9·4.

The Cor. D. M. star, 10 mag. at $3^h\ 16^m\ 18^s$ $-24°$ 58′ was also observed on all the above occasions and its mean mag. found = 9·25, range 9·1 to 9·6, latter once only. It is 9·6 mag. in the C.P.D.

No. 46. $3^h\ 19^m\ 30^s$ $-29°\ 26'$ 8·9

Kapteyn:—One rejected obs. −0 (10·0).
Looked up on plates, found on three plates as an extremely faint star.

Cape:—1897, Jan. 24, 9·0 mag., reddish.

No. 47. $3^h\ 47^m\ 16^s$ $-24°\ 34'$ 9·0

Kapteyn:—Certainly missing on three plates.

	mag.		mag.
Cape:—1897, Jan.	30, 9·8	1897, Mar. 14,	9·75
,, Feb.	16, 9·6	,, ,, 23,	9·5
,, ,,	23, 9·6	,, ,, 30,	9·7
,, ,,	27, 9·7	,, Apr. 3,	9·6
,, Mar.	3, 9·6	,, ,, 7,	9·6
,, ,,	10, 9·75	,, Oct. 19,	9·7

Mean: 9·6.

No. 48. $3^h\ 47^m\ 46^s$ $-31°\ 37'$ 9·0

Kapteyn:—Identical with C.P.D. −31° 453 at $3^h\ 48^m\ 46^s$ −31° 37′.

Several stars in Cor. D.M. are here 1m too small in R.A., the above being one of them. See *Cordoba Results*, Vol. XV. Errata.

Cape:—C.P.D. −31° 453:—1897, Feb. 4, 9·0 mag.

No. 49. $3^h\ 47^m\ 58^s$ $-33°\ 42'$ 9·0

Kapteyn:—Looked up on plates and found as follows:— +0 (9·8) $3^h\ 47^m\ 59^s·7$ −33° 41′·9.

The star has been accidently overlooked in both measures, *vid. Corringenda*, C.P.D. II. p. xxxi.

Cape:—1897, Feb. 4, 9·2 mag., orange.

No. 50. $3^h\ 48^m\ 30^s$ $-27°\ 38'$ 8·9

Kapteyn:—Two obs. −0 (9·6).
The star had been rejected on account of a doubt about its stellar nature.

Cape:—1897, Feb. 4, 8·9 mag., orange.

No. 51. $3^h\ 54^m\ 23^s$ $-30°\ 40'$ 8·8

Kapteyn:—One rejected obs. −0 (10·2).
Looked up on plates; extremely faint star on both plates.

Cape:—This star is reddish, say 7·5 mag. on Chandler's scale.

		mag.	
1897, Feb.	4,	9·4	orange.
,, ,,	9,	9·4	
,, ,,	15,	9·3	
,, ,,	21,	[9·1]	
,, ,,	27,	9·3	
,, Mar.	3,	9·3	
,, ,,	10,	9·2	
,, ,,	14,	9·4	
,, ,,	18,	9·1	
,, ,,	31,	9·5	
,, Apr.	3,	9·1	[red].
,, ,,	7,	9·1	
,, Oct.	19,	9·6	
,, ,,	23,	9·4	
,, Nov.	4,	9·2	
,, ,,	12,	9·5	
,, ,,	16,	9·4	
,, ,,	24,	9·55	[red].
,, Dec.	2,	9·0	
,, ,,	10,	9·3	reddish.
,, ,,	13,	9·3	
,, ,,	17,	9·0	red.
,, ,,	18,	9·3	
,, ,,	19,	9·2	
,, ,,	28,	[9·4]	
1898, Jan.	7,	8·95	
,, Feb.	7,	8·85	
,, ,,	9,	9·2	
,, ,,	11,	9·1	
,, ,,	14,	9·3	red.
,, ,,	18,	9·2	
,, ,,	20,	9·1	
,, ,,	27,	8·7	
,, ,,	28,	8·9	
,, Mar.	2,	8·9	
,, ,,	3,	9·05	
,, ,,	4,	9·0	
,, ,,	9,	9·1	
,, ,,	13,	9·1	red = 8.
,, ,,	19,	9·2	,,
,, ,,	23,	9·1	,,
,, ,,	31,	9·2	
,, Apr.	12,	9·3	
,, ,,	20,	9·0	red.
,, June	8,	9·3	
,, Sept.	23,	9·4	
,, Nov.	1,	9·3	
,, ,,	30,	9·3	
,, Dec.	4,	9·0	
1900, Feb.	6,	8·7	red 7.
,, Apr.	3,	9·0	

The range of magnitude 8·7 −9·6 seems too large to be due solely to errors of observation. It is possibly a short period variable, perhaps 3·89 days.

No. 52. $4^h\ 10^m\ 18^s$ $-24°\ 7'$ M. 8·7

Kapteyn:—One rejected obs. −0 (10·2).

Cape:—1898, Aug. 27. No star in exact position. There is a 9·9 mag. about 1′ S. of position given. It is fainter than the star *pr.*, which is called 9·7 in Cor. D.M. and 10·0 mag. in C.P.D.
1899, Nov. 11, 10·0 but 1′ S. of position given.
,, ,, 21, 10±.
1900, Mar. 16. A 9·8 mag. but at least 1′ S. of position given.

Cordoba:—Misprint, read 9·7 mag.

No. 53. $4^h\ 42^m\ 56^s$ $-41°\ 2'$ 9·0

Kapteyn:—One rejected obs. −0 (10·1).

Cape:—1898, Mar. 17, 9·1 mag. orange.
,, ,, 31, 9·3 ,,
,, Apr. 25, 9·1 ,, ±.
Mean: 9·2.

No. 54. $4^h\ 59^m\ 31^s$ $-22°\ 4'$ M. 8·9

Kapteyn:—On *m.* certainly missing, on *c.* perhaps extremely faint star.

Chandler:—Variable. 1803, T Leporis. $8^m·1$ $-10^m·9$ 360^d ±.
Disc. at H.C.O. 1895; confirmed by Paul.
See *Observations of Variable Stars.*
See also Introduction to Vol. I. p. (83) No. 2.

No. 55. $5^h\ 26^m\ 29^s$ $-31°\ 17'·5$ 9·0

Cordoba Observations Vol. XV. p. 334:—Star "does not exist."
,, ,, ,, XVII. p. xxi:—Decl. to be read 7′·5.
,, (by letter):—Only observed once.

No. 56. $5^h\ 32^m\ 20^s$ $-24°\ 29'$ 9·0

Kapteyn:—Certainly missing on four plates.

	mag.		mag.
Cape:—1897, Feb.	23, 10·5	1897, Apr. 10,	10·0
,, Mar.	9, 10·0	,, ,, 13,	9·85
,, ,,	18, 9·8	,, ,, 20,	10·0
,, ,,	20, 9·9	,, ,, 26,	10·1
,, ,,	25, 9·9	,, May 4,	9·8
,, ,,	31, 9·8	,, ,, 13,	10·0
,, Apr.	3, 10·0	,, Oct. 23,	9·85
,, ,,	7, 9·9		

Misprint in Cor. D.M. for 9·8 mag.
Cordoba Observations:—9·7, 9·7 and 10.
Probably not variable. Relying on the Cordoba mag. of 9·0, this was announced as a variable in the *Astr. Nach.* No. 3426.

No. 57. $6^h\ 3^m\ 22^s$ $-24°\ 0'·5$ 8·8

Kapteyn:—Certainly missing on four plates. There is a star 8·7 $\alpha = 6^h\ 3^m\ 17^s·0$ $\delta = -23°\ 59'·7$; but this is also in Cor. D.M.

	mag.		mag.
Cape:—1897, Mar.	20, 9·9 within 30″ ± of a 9·1 mag. star.		
,, Apr.	2, 11·5 not easy to see from proximity of a brighter star.		
,, ,,	3, 11·0		
,, ,,	7, 11·0		
,, ,,	8, 10·5		
,, ,,	10, 10·5		
,, ,,	13, 10·5		
,, ,,	20, 10·5		
,, ,,	26, 10·3		
,, May	4, 10·2		
,, ,,	13, 10·3		
,, ,,	22, 10·5		
,, ,,	29, 11·0		
,, Dec.	2, 10·5		
,, ,,	13, No change.		
,, ,,	23, 11·0		
,, ,,	30, 10·5		
1898, Jan.	5, 10·0		
,, ,,	14, No change.		
,, Feb.	9, 10·5		
,, Mar.	31, 10·5		
,, Apr.	14, 10·7		
,, May	7, 10·5		

Too faint and too near a bright star for very reliable estimates of magnitude.
It is doubtful if this is identical with the star of Cor. D.M.

Cordoba:—Same star as −23°, 3471.

No. 58. $6^h\ 18^m\ 40^s$ $-26°\ 59'·8$ 8·6

Kapteyn:—Certainly missing on plates.
See List No. I. star No. 40, p. 2A.

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No. 59. $6^h\ 18^m\ 55^s$ $-34°\ 14'$ M. 7·9

Kapteyn:—One rejected obs. −o (10·1).

	mag.		mag.
Cape:—1898, Mar.	17, 9·9	1898, Apr.	20, 9·8
,, Apr.	12, 9·7	,, May	18, 9·9

Mean: 9·82.

Misprint:—For 7·9 read 9·9.

The two Cordoba observations were 10 and 9·7.

No. 60. $6^h\ 26^m\ 14^s$ $-38°\ 40'·5$ 8·5

Cordoba has two stars:—
8·5 $6^h\ 26^m\ 14^s·4$ $-38°\ 40'·5$.
8·9 6 26 24·4 −38 41·0.

Kapteyn:—On *c.* and *m.* certainly only the star 8·5 $6^h\ 26^m\ 20^s·5$ $-38°\ 40'·0$.

Cape:—1898, Mar. 17. Only one star and that in C.P.D. position, but there is a star about 10^m pretty near the position of the Cordoba 8·9 mag. star.

1900, Mar. 16. Only one bright star here with a 10th mag. star about 2′ S. *f.*

Cordoba:—Both stars observed on 1890, Feb. 17.
Latter star only ,, ,, ,, Apr. 11.
Observations apparently correct as the 10th mag. near $8·9^m$, also observed once as 10.

There is something inexplicable here at present.

Re-observed here:—
1902, Apr. 15. C.P.D. star only seen.

No. 61. $6^h\ 34^m\ 47^s$ $-31°\ 19'$ 9·0

Kapteyn:—Both on *m.* and *c.* certainly missing. It is contained, however, on the preceding pair of plates ($6^h\ 24^m$) somewhat beyond the limit to which these plates have been measured for the C.P.D., mag = 9·5. The plates $6^h\ 48^m$ seem to be rather poor, at all events those of $6^h\ 24^m$ contain a great deal more of stars on the overlapping portion. Besides *m.* and *c.* there are available the plates 2165, 1304 and 1326. But the first of these is very dark veiled, the two others too much in error to be of much use.

	mag.	col.		mag.
Cape:—1897, Apr.	2, 9·55		1897, Apr.	20, 9·35
,, ,,	3, 9·6	6	,, ,,	26, 9·4
,, ,,	8, 9·6	5·5	,, May	4, 9·4
,, ,,	13, 9·3	7		

Means: 9·51, 6·2.

No. 62. $6^h\ 35^m\ 35^s$ $-31°\ 20'$ 8·9

Kapteyn:—On plates $6^h\ 48^m$ perhaps faint traces of a star. On plates $6^h\ 24^m$ pretty bright = 9·4 mag. See remarks about plates in No. 61.

	mag.	col.		mag.
Cape:—1897, Apr.	2, 9·2	5·5	1897, Apr.	20, 9·2
,, ,,	3, 9·2		,, ,,	26, 9·3
,, ,,	8, 9·3	5·5	,, May	4, 9·2
,, ,,	13, 9·2	5		

Means: 9·23, 5·3.

No. 63. $6^h\ 36^m\ 16^s$ $-31°\ 51'$ 8·9

Kapteyn:—One rejected obs. (9·8).
Looked up on plates, certainly missing.
See remarks about plates. No. 61.

Cape:—1897, Apr. 2, 8·9, white.
This star appears on plate 4628, 1897 Dec. 6, its mag. there is as follows:—
After C.P.D. mags.:—9·6.
,, Cor. D.M. ,, 9·2.

No. 64. $6^h\ 36^m\ 26^s$ $-31°\ 29'$ M 9·0

Kapteyn:—Certainly missing.
See remarks about plates. No. 61.

Cape:—1897, Apr. 2, 9·2 mag., white.
Plate 4628, 1897, Dec. 6:—
After C.P.D. mags:—9·7.
,, Cor. D.M. ,, 9·3.

No. 65. $6^h\ 37^m\ 52^s$ $-30°\ 20'$ 9·0

Kapteyn:—Certainly missing.
See remarks about plates. No. 61.

	mag.		mag.
Cape:—1897, Apr.	2, 9·0	1897, Apr.	20, 9·2
,, ,,	3, 9·1	,, ,,	26, 9·2
,, ,,	8, 9·0	,, May	4, 9·1
,, ,,	13, 9·2		

Mean: 9·11.

No. 66. $6^h\ 38^m\ 17^s$ $-30°\ 36'$ 8·7

Kapteyn:—Very faint traces on both *m.* and *c.*, as also on plate 2165.
See remarks about plates. No. 61.

Cape:—1897, Apr. 2, 9·2 mag.
,, ,, 3, 9·0 ,,
,, ,, 8, 9·1 ,,
,, ,, 13, 9·2 ,,
,, ,, 20, 9·0 ,, red = 5
,, ,, 26, 9·1 ,,
,, May 4, 9·0 ,,
Mean: 9·09.

No. 67. $6^h\ 38^m\ 56^s$ $-31°\ 59'·6$ 8·7

Kapteyn:—Certainly missing.
See remarks about plates. No. 61.

Cape:—On Catalogue Plate 4750 taken 1898, Feb. 10, the star is visible with exposure of 6^m and 3^m but not 20^s:—Mag. = 10·3 ±.

Visual:—

	mag.	col.
1897, Apr.	9, 8·9	4
,, ,,	10, 9·1	2
,, ,,	13, 9·1	
,, ,,	20, 8·9	3
,, ,,	26, 9·2	
,, May	4, 9·1	
,, ,,	13, 9·3	
,, ,,	22, 9·2	
,, ,,	29, 9·0	
,, June	1, 9·0	
,, Nov.	24, 8·9	2
,, Dec.	2, 9·2	
,, ,,	10, 8·9	
,, ,,	17, 9·0	
,, ,,	18, 8·9	
,, ,,	23, 8·85	4
,, ,,	26, 9·1	6
,, ,,	28, 8·8	5
,, ,,	30, 8·9	
1898, Jan.	2, 8·8	5
,, ,,	5, 9·0	5
,, ,,	9, 8·85	
,, ,,	14, 8·9	
,, Feb.	9, 8·9	4·5

Means: 9·0 4·0.

No. 68. $6^h\ 40^m\ 44^s$ $-30°\ 24'$ 8·8

Kapteyn:—One rejected obs. −o (9·8).
On both *m.* and *c.* faint traces.
See remarks about plates, No. 61.

Cape:—1897, Apr. 9, 9·3 Query *a* requires $+2^s$
,, ,, 10, 9·2
,, ,, 13, 9·45
,, ,, 20, 9·3
,, ,, 23, 9·3 orange.
,, ,, 26, 9·35
,, May 4, 9·3
Mean:—9·31.

Cor. D.M. −30°, 3502, which was used as the comparison star was taken as of 9·5 mag.

No. 69. $6^h\ 41^m\ 28^s$ $-30°\ 12'$ M. 9·0

Kapteyn:—One rejected obs. −o (9·8). On both *m.* and *c.* faint traces, on plate 2165 missing.
See remarks about plate. No. 61.

	mag.		mag.
Cape:—1897, Apr.	10, 9·2	1897, Apr.	23, 8·9
,, ,,	13, 9·0	,, ,,	26, 9·0
,, ,,	20, 8·9 orange	,, May	4, 9·1

Mean: 9·0.

No. 70. $6^h\ 46^m\ 21^s$ $-30°\ 37'$ 9·0

Kapteyn:—One rejected obs. −o (9·8). On *c.* faint star, on *m.* and plate 2165 certainly missing.
See remarks about plate. No. 61.

	mag.		mag.
Cape:—1897, Apr.	10, 8·8	1897, May	4, 8·9
,, ,,	13, 8·7	,, ,,	13, 9·1
,, ,,	20, 9·0	,, ,,	17, 9·0
,, ,,	23, 8·9	,, ,,	22, 9·0
,, ,,	26, 9·0	,, ,,	29, 9·0 red.

Mean: 8·94.

No. 71. $6^h\ 52^m\ 33^s$ $-30°\ 29'$ 9·0

Kapteyn:—Certainly missing on three plates.
See remarks about plates. No. 61.

Cape:—1897, Apr. 10. No star seen, there is a 9·0 mag. star (double) at $6^h\ 52^m\ 33^s$ $-30°\ 18'·9$ which is not in Cor. D.M. Also Cor. D.M. −30°, 3714 and 3715 appear to be the same star and only one star was seen near the places of Cor. D.M. −30°, 3732 and 3736.

Dr Thome writes that instead of 30° 29′ read 30° 19′; that the stars −30°, 3714 and 3715 are due to misprints and should be struck out. Also, that −30°, 3732 was observed once = 10^m and that −30°, 3736 was observed thrice, mag. = 9·9.
See Errata in Cor. D.M.

No. 72. $6^h\ 52^m\ 54^s$ $-35°\ 52'$ 9·0

Kapteyn:—One rejected obs. −o (9·9).

	mag.	
Cape:—1898, Mar.	17, 9·5	
,, Apr.	20, 9·2	orange red.
,, ,,	23, 9·4	
,, ,,	26, 9·2	very red = 8·5.
,, May	7, 9·0	reddish.
,, ,,	15, 9·4	
,, ,,	21, 9·35	
,, ,,	31, 9·4	
,, Aug.	24, 9·4	

Mean: 9·32, red.

No. 73. $6^h\ 59^m\ 42^s$ $-31°\ 28'$ 8·7

Kapteyn:—One rejected obs. −o (9·6).
Looked up on plates, extremely faint star on both plates. On plate 1311, which is considerably poorer, certainly missing.

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			mag.	
Cape :—1897,	Apr.	10,	8·8	orange.
,,	,,	20,	9·1	
,,	,,	23,	9·3	
,,	,,	26,	9·3	
,,	May	4,	9·2	
,,	,,	13,	9·1	
,,	,,	22,	9·1	orange.
,,	,,	29,	9·3	
,,	June	7,	9·2	
,,	,,	14,	9·05	
,,	Nov.	24,	9·0	red.
,,	Dec.	4,	9·0	yellow.
,,	,,	10,	9·3	red.
,,	,,	17,	8·9	
,,	,,	23,	9·0	
,,	,,	28,	9·0	
1898,	Jan.	2,	9·1	
,,	,,	15,	9·0	reddish.
,,	Mar.	2,	9·0	

Mean : 9·09 orange.

No. 74. $7^h\ 4^m\ 24^s$ —30° 1′ M. 9·0

Kapteyn :—One rejected obs. −0 (9·6).
Looked up on plates ; on *c.*, which is the best of the plates, faint star ; on *m.* plate and plate 1311 certainly missing.

Cape :—1897,	Apr.	13,	9·3	mag.	
,,	,,	20,	9·3	,,	(red).
,,	,,	23,	9·4	,,	
,,	,,	26,	9·4	,,	
,,	May	4,	9·4	,,	

Mean : 9·36 (red).

No. 75. $7^h\ 10^m\ 9^s$ —31° 49′ 9·0

Kapteyn :—Two observations : −0 (9·6). Was rejected on account of a doubt about its stellar nature.
Looked up on plates ; extremely faint star on both *m.* and *c.* On plate 1311 certainly missing.

			mag.	
Cape :—1897,	Apr.	13,	9·3	
,,	,,	20,	9·5	
,,	,,	23,	9·5	
,,	,,	26,	9·6	red.
,,	May	4,	9·5	
,,	,,	13,	9·7	
,,	,,	22,	9·5	
,,	,,	29,	9·6	
,,	Nov.	4,	9·2	
,,	Dec.	4,	9·4	(reddish).
,,	,,	10,	9·4	
,,	,,	17,	9·4	

Mean : 9·46 reddish.

No. 76. $7^h\ 13^m\ 6^s$ —38° 29′ 8·5

Kapteyn :—The Cor. D.M. has two stars as follows :—
8·5 mag. $7^h\ 13^m\ 6^s·5$ —38° 29′·0.
8·5 ,, 7 13 13·2 —38 29·5 Z.C.
On *c.* and *m.*, certainly only the star 8·2 mag. $7^h\ 13^m\ 12^s·0$ —38° 29′·0.

Cape :—1898, Mar. 18. There is an 8·2 mag. star in the C.P.D. and C.Z. position, with a 10th mag. star S. *p.* The latter is approximately in the position of the Cor. D.M. star. There is also a 10th mag. star S. *f.*

Cordoba :—First star, read 10 mag.

No. 77. $7^h\ 23^m\ 56^s$ —29° 7′ 8·9

Kapteyn :—One rejected obs. −0 (10·0).

Cape :—1897,	Jan.	23,	9·8	closely *f.* a 10^m star.	
,,	,,	30,	9·5	red	,, ,, ,,
,,	Feb.	5,	9·6	,,	= 6.
,,	,,	13,	9·6	,,	= 6.
Cape :—1897,	Mar.	15,	9·65		
,,	Apr.	2,	9·5	red.	
,,	,,	3,	9·55	,,	
,,	,,	8,	9·55	very red = 7.	
,,	,,	23,	9·7		
,,	May	4,	9·5		
,,	,,	13,	9·5	red.	
,,	June	1,	9·6		

Mean : 9·59 colour = 6·3.

There are many stars hereabouts brighter than 10^m not contained in Cor. D.M.

No. 78. $7^h\ 34^m\ 14^s$ —35° 2′ M. 9·0

Kapteyn :—Cor. D.M. doubtless in error and declination = —35° 12′·1, at this declination there is a star 8·4 mag. in C.P.D.

Cape :—1898, Mar. 18. An 8·5 mag. star at —35° 12′ ±. No star in Cor. D.M. position.
1900, Apr. 28. At 12′ = 8·5 mag. *y* 4.

Cordoba :—Misprint, for 2′ read 12′, the mags. were
1890, Apr. 13, 10 mag.
,, May 12, 8 ,,
1892, Dec. 20, 9 ,, variable ?

No. 79. $7^h\ 50^m\ 24^s·5$ —22° 11′·7 3·7

Kapteyn :—Also missing in B.D. Mag. to read 9·7 ?
Cordoba :—Yes !

No. 80. $8^h\ 33^m\ 47^s$ —31° 0′ 9·0

Kapteyn :—On three plates $8^h\ 24^m$ certainly missing. On *m.* and *c.* $8^h\ 48^m$ perhaps extremely faint traces. On plate 1329 certainly missing.

			mag.				mag.
Cape :—1897,	Jan.	31,	9·5	1897,	May	10,	9·2
,,	Feb.	28,	9·6	,,	June	1,	9·5
,,	Mar.	4,	9·5	,,	,,	7,	9·45
,,	Apr.	3,	9·4	,,	July	2,	9·3
,,	,,	10,	9·3	,,	,,	14,	9·3
,,	May	4,	9·4				

Mean : 9·4.

No good comparison stars.

Cor. D.M. —30°, 6562 mag. 9·7 was observed on three occasions during the period of the above observation, and its mag. estimated as 10·2, 10·5, 10·5. It is a double star.

C.P.D. —30° 2598 mag. 9·8 which is not in Cor. D.M., was observed on five occasions as = 9·3, 9·7, 9·5, 9·6, 9·6.

No. 81. $8^h\ 58^m\ 44^s$ —29° 26′ 8·9

Kapteyn :—On two plates at $8^h\ 48^m$ and two plates $9^h\ 12^m$ there is an extremely faint star. On two other plates, certainly missing.

Cape :—1897,	Jan.	26,	9·7	mag. closely *f.* by a double star, each component = 9·9.	
,,	Feb.	25,	9·5	mag. (orange red) closely *f.* by a double star, each component = 9·7	and 9·8.
,,	Mar.	5,	9·5		
,,	Apr.	3,	9·3	red.	
,,	,,	10,	9·3	red.	
,,	May	4,	9·3		
,,	,,	10,	9·3	reddish.	
,,	June	1,	9·3	red. Close to a pair each = 9·8.	
,,	,,	7,	9·5		
,,	July	2,	9·2		
,,	,,	13,	9·2		

Mean : 9·37 red.

If this star and the small double closely following are viewed as one star it should appear about equal to 8·9 mag.

The reddish hue will account for its non-appearance in the C.P.D.

No. 82. $9^h\ 3^m\ 49^s$ —28° 30′ M. 8·8

Kapteyn :—One rejected obs. −0 (10·2).

			mag.	col.
Cape :—1897,	Feb.	16,	9·5	
,,	,,	18,	9·2	
,,	,,	25,	9·5	(redness = 7).
,,	,,	27,	9·3	
,,	Apr.	3,	9·3	(orange).
,,	,,	10,	9·3	
,,	May	4,	9·7	
,,	,,	10,	9·7	
,,	,,	20,	9·6	
,,	,,	22,	9·7	
,,	,,	29,	9·7	
,,	,,	31,	9·8	
,,	June	1,	9·75	
,,	,,	7,	9·65	
,,	,,	12,	9·75	
,,	,,	26,	9·7	
,,	July	2,	9·75	
,,	,,	13,	9·5	
,,	Dec.	4,	9·0	yellow.
,,	,,	17,	9·0	
,,	,,	23,	9·15	
,,	,,	26,	9·1	
,,	,,	30,	9·15	
1898,	Jan.	4,	9·15	
,,	,,	5,	9·1	
,,	,,	10,	9·1	
,,	,,	14,	9·2	
,,	,,	21,	9·2	
,,	,,	30,	9·2	
,,	Feb.	7,	9·15	
,,	,,	18,	9·15	
,,	Mar.	10,	9·4	
,,	,,	25,	9·15	
,,	May	13,	9·1	very red.
,,	,,	17,	9·2	
,,	,,	27,	9·2	
,,	June	8,	9·2	
,,	,,	14,	9·2	
,,	Aug.	24,	9·3	
,,	Dec.	31,	9·2	
1899,	May	27,	9·2	
,,	July	12,	9·25	
1900,	Jan.	16,	9·15	red = 6.

The range is 9·0 to 9·8 which is larger than the errors of observation.

The star *f.* which in Cor. D.M. is rated 8·7 mag. was estimated on four occasions (9·2 — 9·4) mean = 9·26 mag. Is 9·6 mag. in C.P.D.

	h	m	s	°	′	
No. 83.	9	3	44	—23	2·7	9·2
No. 84.	9	3	52	—23	1·1	8·8
No. 85.	9	3	52	—22	59·6	8·5

Kapteyn :—The C.P.D. and S.D. have only the two stars :—

h	m	s	°	′	mag.
9	3	44	—23	2·1	9·2
9	3	52	—23	0·8	8·4

The two latter positions of the Cor. D.M. belong probably to the same star ?
See Errata in Cor. D.M.

No. 86. $9^h\ 3^m\ 56^s$ —30° 28′ 8·8

Kapteyn :—Doubtful traces on both *m.* and *c.* plates. On two other plates certainly missing.

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	mag.	col.
Cape :—1897, Feb.	16,	9·2 redness = 7.
,, ,,	18,	9·2
,, ,,	25,	9·3
,, ,,	27,	9·3
,, Apr.	3,	9·2 yellow.
,, ,,	10,	8·9 red.
,, May	4,	9·0
,, ,,	10,	9·0
,, June	1,	9·2
,, ,,	7,	9·2
,, July	13,	9·1

Mean : 9·15 colour = 7.

No. 87. $9^h\ 10^m\ 49^s$ —29° 5′ M. 9·0

Kapteyn :—One rejected obs. −o (10·0).
Looked up on plates :—on both *m.* and *c.* extremely faint star, on plates 1313 and 1347 (which are much poorer) certainly missing.

	mag.		mag.
Cape :—1897, Feb.	16, (9·6)	1897, Dec.	23, 9·3
,, ,,	18, 9·1	1898, Jan.	4, 9·3
,, ,,	25, 9·1	,, ,,	10, 9·2
,, Mar.	4, 9·2	,, ,,	21, 9·3
,, Apr.	3, 9·5	,, ,,	30, 9·1
,, ,,	10, 9·3	,, Feb.	7, 9·5
,, May	4, 9·55	,, ,,	8, 9·3
,, ,,	10, 9·3	,, ,,	14, 9·3
,, ,,	22, 9·6	,, ,,	18, 9·6
,, June	14, 9·5	,, ,,	28, 9·3
,, July	2, 9·6	,, Mar.	10, 9·7
,, ,,	13, 9·3	,, ,,	25, 9·2
,, Dec.	4, 9·5	,, May	17, 9·5
,, ,,	17, 9·15	,, ,,	27, 9·5

Mean : 9·4.

There are no good comparison stars, still the range of magnitude 9·1 to 9·7 seems somewhat larger than the probable error of observation.

No. 88. $9^h\ 12^m\ 28^s$ —31° 28′ 8·9

Kapteyn :—Doubtful traces on both *m.* and *c.* ; on two other plates (1313 and 1347) [see No. 87] certainly missing.

	mag.	col.
Cape :—1897, Feb.	16, 9·5	
,, ,,	18, 9·4	
,, Mar.	15, 9·4	
,, Apr.	3, 9·2	(reddish).
,, ,,	10, 9·2	
,, May	4, 9·2	
,, ,,	10, 9·2	
,, ,,	22, 9·2	
,, June	8, 9·2	
,, ,,	14, 9·2	
,, July	2, 9·3	
,, ,,	13, 9·15	
,, Dec.	4, 9·4	
,, ,,	17, 9·3	

Mean : 9·28.

Note :—C.Z. IX. 1049. $9^h\ 13^m\ 11^s$, —31° 25′
C.Z. mag. = 9·5
Cor. D.M. ,, = 9·0
C.P.D. ,, = 8·8

Whilst observing No. 88, the magnitude of this star was observed on four occasions as follows :—8·8, 8·7, 8·7, 8·7.

No. 89. $9^h\ 12^m\ 37^s$ —27° 50′·6 8·7

Kapteyn :—One rejected obs. −o (10·0), at $9^h\ 12^m\ 40^s$ —27° 51′·5.

	mag.		mag.
Cape :—1897, Feb.	18, 9·5	1897, Dec.	23, 9·5
,, Mar.	15, 9·4	1898, Jan.	21, 9·3
,, Apr.	3, 9·5	,, Feb.	7, 9·5
,, ,,	10, 9·5	,, ,,	20, 9·3
,, May	4, 9·5	,, ,,	28, 9·4
,, ,,	10, 9·55	,, Mar.	10, 9·3
,, ,,	22, 9·5	,, ,,	25, 9·8
,, June	1, 9·6	,, May	17, 9·3
,, ,,	8, 9·6	,, ,,	27, 9·1
,, ,,	12, 9·5	,, June	8, 9·3
,, ,,	26, 9·3	,, ,,	15, 9·3
,, July	2, 9·4	,, Dec.	14, 9·4
,, ,,	13, 9·25	1899, May	27, 9·4
,, Dec.	4, 9·5	,, July	12, 9·45
,, ,,	17, 9·3		

Mean : 9·41.

Notes on neighbouring stars.
O. A. 9554 $9^h\ 12^m\ 14^s$ —27° 49′
Arg. mag. = 9·0
Cor. D.M. ,, = 8·4
C.P.D. ,, = 9·0
Four estimates gave 8·7, 8·9, 8·8 and 8·7.
Cor. D.M. —27°,6454 $9^h\ 12^m\ 53^s$ —27° 51′ mag. 9·7.
Twenty-eight estimates between 1897, April 3 and 1899, July 12, range from 10·0 to invisible. The average being about 10·7.

No. 90. $9^h\ 15^m\ 10^s$ —31° 12′ M. 9·0

Kapteyn :—Certainly missing on four plates.

	mag.		mag.
Cape :—1897, Feb.	18, 10·0	1897, June	26, 10·0
,, ,,	25, 10·0	,, July	2, 9·95
,, Mar.	15, 10·2	,, ,,	13, 9·9
,, Apr.	3, 10·0	,, Dec.	4, 9·9
,, ,,	10, 9·9	1898, Feb.	7, 10·0
,, May	4, 9·9		

Mean : 10·0.

Query :—For 9·0 in Cor. D.M. to read 9·9 mag. ?
Cordoba :—Read 10 mag.

No. 91. $9^h\ 16^m\ 1^s$ —26° 16′ 9·0

Kapteyn :—Certainly missing on three plates.

	mag.		mag.
Cape :—1897, Feb.	18, 9·4	1897, Apr.	10, 9·2
,, ,,	27, 9·3	,, May	4, 9·3
,, Mar.	15, 9·3	,, ,,	17, 9·3
,, Apr.	3, 9·2		

Mean : 9·29.

This is W_2 1948, 3 obs. (1882·9) mag. 9·1.

No. 92. $9^h\ 17^m\ 17^s$ —27° 7′ 8·9

Kapteyn :—One rejected obs. (10·0).

	mag.	col.
Cape :—1897, Feb.	18, 8·9	redness = 6.
,, May	4, 9·6	
,, ,,	10, 9·6	
,, ,,	17, 9·5	
,, ,,	22, 9·5	
,, ,,	31, 9·5	
,, June	12, 9·7	
,, ,,	26, 9·5	
,, July	2, 9·2	
,, ,,	13, 9·4	red.
,, Dec.	4, 9·0	
,, ,,	17, 9·1	red.
,, ,,	23, 9·5	
1898, Jan.	4, 9·0	
,, ,,	10, 9·4	
,, ,,	21, 9·1	
,, ,,	30, 9·0	
,, Feb.	7, 9·0	

The discordances of the observed magnitudes were so marked that a new map was made and comparison stars re-selected ; since then :—

	mag.		mag.
1898, Feb.	8, 9·4	1898, May	27, 9·6
,, ,,	14, 9·55	,, June	9, 9·5
,, ,,	18, 9·6	,, ,,	15, 9·6
,, ,,	28, 9·5	1899, May	27, 9·6
,, Mar.	10, 9·5	,, June	10, 9·2
,, ,,	25, 9·6	,, ,,	13, 9·6
,, May	17, 9·6	1900, Jan.	6, 9·4

No. 93. $9^h\ 18^m\ 6^s$ —26° 53′ M. 9·0

Kapteyn :—Certainly missing on three plates.

	mag.		mag.
Cape :—1897, Feb.	18, (8·8)	1897, July	2, 9·3
,, ,,	27, 9·3	,, ,,	13, 9·4
,, Mar.	15, 9·4	,, Dec.	4, 9·1
,, Apr.	10, 9·3	,, ,,	17, 9·0
,, May	4, 9·2	,, ,,	23, 9·2
,, ,,	10, 9·2	1898, Jan.	4, 9·0
,, ,,	22, 9·3	,, ,,	10, 9·0
,, ,,	31, 9·2	,, ,,	21, 9·2
,, June	12, 9·5	,, Feb.	7, 9·3

Mean : 9·2.

Perhaps variable from 9·0 to 9·4 mag.

No. 94. $9^h\ 18^m\ 32^s$ —26° 12′ 8·9

Kapteyn :—Two observations −o (9·8) was rejected on account of a doubt about its stellar nature.

	mag.		mag.
Cape :—1897, Feb.	27, 9·3	1897, Apr.	10, 9·3
,, Mar.	15, 9·2	,, May	4, 9·3

No. 95. $9^h\ 20^m\ 24^s$ —30° 31′ 8·5

Kapteyn :—One rejected obs. —o (9·8).
Looked up on plates ; a star −o (9·8) on both *m.* and *c.* On plates 1313, 1347, 1330 and 1356 certainly missing.

	mag.		mag.
Cape :—1897, Mar.	15, 9·0	1897, May	22, 9·0
,, May	4, 9·0	,, June	12, 9·0
,, ,,	17, 8·9	,, July	2, 9·0

No. 96. $9^h\ 21^m\ 33^s$ —24° 12′ 8·9

Kapteyn :—Missing in two sweeps.
Cape :—1900, Jan. 6, 9·2 mag.
,, Mar. 18, 9·7 ,,
,, May 6, 9·6 ,,

No. 97. $9^h\ 21^m\ 43^s$ —27° 4′ 8·7

Kapteyn :—One rejected obs. −o (10·0).

	mag.		mag.
Cape :—1897, Mar.	15, 8·6	1897, July	2, 8·8
,, May	10, 8·7	,, ,,	13, 8·9
,, June	14, 9·1		

Mean : 8·8.

Re-observed
1900, Mar. 22, 8·8 (red).
This is Thome's scale for the surrounding stars, but an independent estimate would be = 9·5 mag., not brighter.

No. 98. $9^h\ 22^m\ 59^s$ —26° 46′ 9·0

Kapteyn :—Certainly missing on three plates.
Cape :—1897, Mar. 15, 9·2 mag.
,, May 10, 9·0 ,,
Re-observed
1900, Mar. 22, 8·7 ,,
In Thome's scale, really = 9·3 mag.

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No. 99. $9^h\ 24^m\ 28^s$ $-28°\ 50'$ M. 9·0

Kapteyn:—One rejected obs. —o (10·0).
Cape: 1897, Mar. 3, 8·9 mag., redness 6.

No. 100. $9^h\ 25^m\ 9^s$ $-27°\ 51'$ 8·7

Kapteyn:—Certainly missing on three plates.
Star "does not exist." See *Astr. Journal* vol. 16 p. 30. Declination is —26°.

No. 101. $9^h\ 29^m\ 5^s$ $-24°\ 12'$ 8·9

Kapteyn:—Certainly missing on three plates.

	mag.		mag.
Cape:—1897, Mar. 6,	11·0	1897, May 31,	10·1
,, ,, 18,	10·0	,, July 2,	11·0
,, May 10,	11·0	,, ,, 13,	10·0
,, ,, 22,	10·5		

Mean: 10·5.

Cordoba:—Misprint for 9·8 mag. viz.
1887, Jan. 15, 10 ,,
,, ,, 17, 10 ,,
1888, Feb. 2, 9·75 ,,
Dr Thome adds "probably below 10."

No. 102. $9^h\ 33^m\ 12^s$ $-30°\ 37'$ 9·0

Kapteyn:—Extremely faint star on both *m.* and *c.*

	mag.		mag.
Cape:—1897, Mar. 6,	9·6	1897, May 22,	9·7
,, ,, 15,	9·3	,, June 12,	9·6
,, ,, 18,	9·7	,, July 2,	9·65
,, May 10,	9·75	,, ,, 13,	9·5

Mean: 9·6.

No. 103. $9^h\ 33^m\ 28^s$ $-28°\ 5'$ 9·0

Kapteyn:—Certainly missing on *m.* (No. 1375). On *c.* (No. 2252) very conspicuous: diameter reduced to system of *m.* +1 (=9·2 mag.). Stellar nature indubitable (as seen under the microscope). On plate 1392 and on four plates at $9^h\ 45^m$ certainly missing. (Fifth plate of this region No. 2331 is in error). There can be little doubt about the star's *variability*.

	mag.		mag.
Cape:—1897, Feb. 16,	9·2	1900, Jan. 16,	9·1
,, ,, 18,	8·9	1902, Apr. 23,	9·25
,, ,, 25,	9·0	,, May 1,	9·2
,, Mar. 15,	9·0	,, ,, 14,	9·2
,, May 10,	9·0	,, ,, 26,	9·1

No colour noticeable on 1902 Apr. 23 and May 26.
Cordoba:—Variable.

No. 104. $9^h\ 39^m\ 20^s$ $-24°\ 0'$ 8·8

Kapteyn:—One rejected obs. —o (10·3).

	mag.		mag.
Cape:—1897, Mar. 6,	9·1	1897, July 2,	9·2
,, ,, 15,	9·3	,, ,, 13,	9·4
,, May 2,	9·4	,, Dec. 4,	9·3
,, June 12,	9·4		

Mean: 9·33.

Cordoba:—Misprint for 9·8. Observations:

	mag.		mag.
1887, Jan. 15,	9·5	1892, May 1,	9·75
,, ,, 27,	9·0	,, ,, 2,	9·5
1888, Feb. 3,	8		

It is not apparent why Cordoba call the star 9·8 mag. The mean of their observations is 9·15 mag.

No. 105. $9^h\ 42^m\ 28^s$ $-31°\ 36'$ 9·0

Kapteyn:—Two obs. —o (10·4).
Was rejected on account of a doubt about its stellar nature.
Looked up on plates:—on both plates faintly visible. *Nebulous.* Not in *Dreyer Gen. Cat.* of Nebulæ.

Cape:—1897, Feb. 27. A small wide double here 9·7 and 10 mag., 7″± no trace of nebulosity.
1900, Mar. 22. 9·6 and 10 mag. 10″ *comes* is N. *pr.*

No. 106. $9^h\ 48^m\ 0^s$ $-31°\ 10'$ M. 9·0

Kapteyn:—One rejected obs. —o (10·4).
Looked up on plates:—an extremely faint star on both *m.* and *c.* On third plate certainly missing.

	mag.		mag.
Cape:—1897, May 10,	9·0	1898, Jan. 10,	9·3
,, ,, 22,	9·5	,, ,, 23,	9·25
,, ,, 30,	9·3	,, Feb. 7,	9·0
,, June 12,	9·3	,, ,, 14,	9·3
,, July 13,	9·6	,, ,, 20,	9·3
1898, Jan. 7,	9·4		

Mean: 9·3.

The star 70 secs. *pr.*, mag. 9·8 in the Cor. D.M. is double 9·2 and 9·8 mag. (7/1/98). Mag. 9·4 (20/2/98).

No. 107. $9^h\ 50^m\ 5^s$ $-29°\ 11'$ 9·0

Kapteyn:—One rejected obs. —o (10·4).
Looked up on the plates: an extremely faint star on three plates.

	mag.		mag.
Cape:—1897, May 10,	9·25	1897, July 3,	9·3
,, ,, 22,	9·4	1898, Jan. 7,	9·4
,, ,, 30,	9·25		

Mean: 9·3.

No. 108. $9^h\ 54^m\ 43^s$ $-31°\ 35'·4$ 8·9

Kapteyn:—Certainly missing on three plates.
Probably error in Thome, corrected declination $=-31°\ 55'·4$.
Cape:—1899, May 10. No star.
,, ,, 22. ,, ,,
A 9·4 or 9·5 mag. seen at $-31°\ 55'±$.
Cordoba:—Misprint, $\delta=-31°\ 55'·4$
Magnitudes:—
Tucker, 8 and 8·5 mag.
Thome, 9·25 mag.

No. 109. $10^h\ 5^m\ 2^s$ $-33°\ 32'$ 8·9

Kapteyn:—One rejected obs. —o (10·4).
Looked up on three plates, faintly visible.

	mag.		mag.
Cape:—1897, May 10,	9·0	1897, July 31,	[9·2]
,, ,, 22,	9·0	1900, Mar. 22,	9·0
,, ,, 30,	9·0		

This is Madras (1875) No. 2294 mag. 9·6 (5 obs. 1868·8).

No. 110. $10^h\ 9^m\ 47^s$ $-31°\ 6'$ 9·0

Kapteyn:—On three plates at $10^h\ 0^m$ and on *m.* and *c.* of the region $10^h\ 24^m$, star very faintly visible. On sixth plate star certainly missing.

	mag.		mag.
Cape:—1897, May 10,	9·3	1897, May 30,	9·3
,, ,, 22,	9·3	,, July 31,	9·4

No. 111. $10^h\ 11^m\ 43^s$ $-29°\ 15'$ 8·8

Kapteyn:—One obs. —o (10·1).
Looked up on plates. Both on *m.* and *c.* an extremely faint star. Missing on third plate.

	mag.		mag.
Cape:—1897, May 10,	9·1	1897, June 12,	9·2
,, ,, 22,	9·2	1898, Jan. 7,	9·1
,, ,, 30,	9·0		

Mean: 9·1.

No. 112. $10^h\ 16^m\ 32^s$ $-31°\ 43'$ M. 8·8

Kapteyn:—One rejected obs. —o (10·1).
Looked up on plates. Both on *m.* and *c.* an extremely faint star. Missing on third plate.
Cape:—1897, May 10, 9·3 mag., reddish.
,, ,, 22, 9·2 ,,
,, ,, 30, 9·3 ,,
,, Aug. 1, 9·0 ,,
1898, Jan. 7, 8·8 ,,
,, Feb. 8, 9·1 ,,
Mean: 9·1.
Double, *comes* 10·5 mag. N. *pr.* 8″.

No. 113. $10^h\ 20^m\ 10^s$ $-32°\ 0'·7$ 9·0

Kapteyn:—Doubtful traces of a star on both *m.* and *c.* at declination $-32°\ 1'·9$. On third plate certainly missing.
Cape:—1897, May 10, 9·4 mag. but S.
,, ,, 22, 9·4 ,,
,, June 12, 9·3 ,,
,, Aug. 1, 9·0 ,,
1898, Jan. 7, 9·3 ,,
,, ,, 10, 9·4 ,, δ 1′·3 ±.
,, Feb. 8, 9·2 ,, δ 1′·7 ±.
Mean: 9·3.
The Cor. D.M. declination of the *pr.* star is also a little in error.

No. 114. $10^h\ 20^m\ 58^s$ $-24°\ 40'$ 9·0

Kapteyn:—Missing in two sweeps.
Cape:—1900, Jan. 6, 9·5 mag.
,, Mar. 8, 9·4 ,,

No. 115. $10^h\ 21^m\ 45^s$ $-29°\ 54'$ 8·9

Kapteyn:—One rejected obs. —o (10·1).
Looked up on plates; doubtful traces on both *m.* and *c.* Missing on third plate.

	mag.		mag.
Cape:—1897, May 21,	9·6	1897, Aug. 1,	9·5
,, ,, 22,	9·3	1898, Feb. 7,	9·55
,, June 12,	9·5		

Mean: 9·5.

The Cor. D.M. star 9·0 mag. at $10^h\ 21^m\ 34^s$ $-29°\ 42'$ was estimated on three occasions as mags. 9·2, 9·4 and 9·6.

No. 116. $10^h\ 27^m\ 4^s$ $-29°\ 20'$ 9·0

Kapteyn:—One rejected obs. —o (10·1).
Looked up on plates; faint star on both *m.* and *c.* Certainly missing on third plate.
Cape:—1897, May 22, 9·4 mag.
,, June 12, 9·1 ,,
,, ,, 29, 9·0 ,, reddish.
,, Aug. 1, 9·2 ,,
1898, Feb. 7, 9·0 ,,
Mean: 9·14 ,, reddish.

No. 117. $10^h\ 30^m\ 41^s$ $-27°\ 26'$ 8·8

Kapteyn:—One rejected obs. —o (9·6).

	mag.
Cape:—1897, May 10,	9·0
,, ,, 22,	8·9 with an 11^m star *n.p.* 30″.
,, June 12,	8·9 ,, 10 ,, 1′.
,, ,, 29,	8·9

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No. 118. $10^h\ 31^m\ 45^s$ $-29°\ 52'$ M. 8·8

Kapteyn :—On both *m.* and *c.* extremely faint star. On third plate certainly missing.

mag.		mag.
Cape :—1897, May 22,	9·3	1897, Aug. 1, 9·4
,, June 1,	9·6	1898, Feb. 7, 9·5
,, ,, 12,	9·5	

Mean : 9·5.

The Cor. D.M. 9·2 mag. at $10^h\ 30^m\ 27^s$ $-29°\ 50'$ is double, mag. 9·9 and 10 ; 3″.

No. 119. $10^h\ 33^m\ 3^s$ $-27°\ 31'$ 9·0

Kapteyn :—One rejected obs. —0 (9·6).
Cape :—1897, May 22, 9·3 mag.
,, June 12, 9·4 ,,
,, Aug. 1, 9·4 ,,

No. 120. $10^h\ 33^m\ 49^s$ $-31°\ 36'·5$ 9·0

Kapteyn :—Of the plates of $10^h\ 24^m$ the *c.* only shows the star very faintly ; *m.* and *c.* at $10^h\ 48^m$ both contain the star very faintly. On a third plate of this region the star is certainly missing.
Cape :—1897, May 22, 8·9 mag.
,, June 12, 8·85 ,,
,, Aug. 1, 9·0 ,,
1898, Feb. 8, 8·9 ,, red = 7.

No. 121. $10^h\ 45^m\ 22^s$ $-27°\ 58'$ 8·7

Kapteyn :—Certainly missing on three plates.
Cape :—Variable, 8·4 mag., to invisible.
See Variable Stars.

No. 122. $10^h\ 52^m\ 18^s$ $-27°\ 49'$ 8·7

Kapteyn :—One rejected obs. —0 (10·2).

mag.		mag.
Cape :—1897, Apr. 2,	9·1	1897, June 12, 9·1
,, ,, 3,	9·2	,, Aug. 2, 9·1

No. 123. $10^h\ 54^m\ 20^s$ $-28°\ 7'$ 9·0

Kapteyn :—One rejected obs. —0 (10·2).
Cape :—1897, Apr. 2, 9·3 F.
,, ,, 2, 9·1 } about same mag. as star
,, ,, 12, 9·1 } 3″·5 South.

No. 124. $10^h\ 55^m\ 28^s$ $-28°\ 12'$ 8·9

Kapteyn :—Doubtful traces on two plates ; on third certainly missing.
Cape :—1897, Feb. 4, 8·9 mag., reddish.
1898, Mar. 2, 9·05 ,,

No. 125. $10^h\ 56^m\ 36^s$ $-35°\ 48'$ 9·0

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1898, Mar. 19. No star here. (Many discrepancies among Thome's stars).
Cordoba :—Misprint, for 36^s read 26^s. Is = C.P.D. $-35°$, 4560.
Erase Cor. D.M. $-35°$, 6922.

No. 126. $10^h\ 58^m\ 32^s$ $-24°\ 12'$ 8·9

Kapteyn :—One rejected obs. —0 (10·2).
Cape :—1897, May 22, 8·8 mag.
,, June 12, 8·9 ,,
,, Aug. 2, 8·9 ,,

No. 127. $10^h\ 59^m\ 22^s$ $-30°\ 8'$ M. 9·0

Kapteyn :—Extremely faint stars on both plates.
Cape :—1897, May 22, 9·3 mag.
,, June 12, 9·1 ,,
,, Aug. 2, 9·0 ,,

No. 128. $11^h\ 0^m\ 26^s$ $-31°\ 58'$ 8·9

Kapteyn :—One rejected obs. —0 (10·2).
Looked up ; extremely faint star on both plates.
Cape —1897, Mar. 31. Seen 9·0 mag., reddish, say 7.

No. 129. $11^h\ 4^m\ 29^s$ $-32°\ 9'$ 9·0

Kapteyn :—One rejected obs. —0 (10·2).
Looked up ; extremely faint star on both plates.
Cape :—1897, Mar. 31. Seen 9·0 mag., perhaps orange.

No. 130. $11^h\ 6^m\ 51^s$ $-30°\ 1'$ 9·0

Kapteyn :—One rejected obs. —0 (10·2).
Looked up. Doubtful traces on *c.* on *m.* certainly missing.
Cape :—1897, May 22, 9·1 mag.
,, June 12, 8·9 ,,
,, ,, 29, 9·0 ,,

No. 131. $11^h\ 6^m\ 51^s$ $-30°\ 47'$ 9·0

Kapteyn :—One rejected obs. —0 (10·2).
Looked up ; extremely faint star on both plates.
Cape :—1897, May 22, 9·1 mag.
,, June 12, 8·9 ,,
,, ,, 29, 9·0 ,,

No. 132. $11^h\ 10^m\ 6^s$ $-29°\ 31'$ 9·0

Kapteyn :—Certainly missing on both plates.
Cape :—1897, May 22, 9·2 mag. a very wide double.
,, June 12, 9·3 and 9·4 mag. 275°, 60″±.
,, ,, 29, 9·2 and 9·5 ,, two stars.

No. 133. $11^h\ 12^m\ 6^s$ $-32°\ 10'$ 9·0

Kapteyn :—One rejected obs. —0 (10·2).
Looked up : extremely faint star on both plates.
Cape :—1897, Mar. 31. Seen 9·0 mag. close to a faint diffused nebula.

No. 134. $11^h\ 16^m\ 15^s$ $-25°\ 41'$ 6·9

Kapteyn :—Certainly missing on three plates. Not in Errata to Cor. D.M. (neither in Vol. 16 or in Vol. 17). Not in Z.C., G.C., W.A. or O.A.
Cape :—1897, Feb. 13,—Aug. 2.
12 observations ranging from 9·8 to 9·9 mag.
Mean :—9·85 mag.
Cordoba :—Misprint for 9·9 mag.

No. 135. $11^h\ 27^m\ 35^s$ $-33°\ 56'$ 8·9

Kapteyn :—Certainly missing on three plates. One rejected observation (9·7 mag.) on plates 35½°, $11^h\ 22^m\ 6^s$.

mag.		mag.
Cape :—1897, May 2,	9·1	1898, Feb. 13, 9·0
,, June 29,	9·5	,, ,, 20, 8·95
,, Aug. 2,	9·5	,, ,, 22, 9·0
,, ,, 5,	9·5	,, Mar. 14, 9·2
1898, Jan. 7,	9·0	,, ,, 17, 9·1
,, Feb. 8,	9·15	,, Apr. 3, 9·0

Mean 9·16.
No good comparison stars in the field.

No. 136. $11^h\ 35^m\ 56^s$ $-32°\ 44'$ M. 9·0

Kapteyn :—Certainly missing on three plates.
Cape :—1897, May 2, 8·9 mag.
,, June 29, 9·0 ,,
1898, Feb. 13, 9·15 ,, red.

No. 137. $11^h\ 40^m\ 23^s$ $-33°\ 40'$ 8·7

Kapteyn :—One rejected obs. —0 (10·3).
Looked up, on *c.* which is much richer than *m.*, star plainly visible : on *m.* extremely faint. On third plate missing.
Cape :—1897, Feb. 13. Seen, 8·8 redness = 6.

No. 138. $11^h\ 41^m\ 22^s$ $-32°\ 35'$ 8·5

Kapteyn :—Certainly missing on three plates.
Cape :—Variable 8·75 mag.—9·6 mag. reddish. See Variable Stars.

No. 139. $11^h\ 43^m\ 18^s$ $-24°\ 54'$ 9·0

Kapteyn :—Certainly missing on four plates.

mag.		mag.
Cape :—1897, May 2,	9·7	1898, Apr. 13, 9·5
,, June 29,	9·6	,, ,, 25, 9·55
,, Aug. 2,	9·5	,, June 6. 9·6
1898, Feb. 8,	9·6	,, ,, 25, 9·6
,, ,, 20,	9·4	,, July 18, 9·6
,, ,, 22,	9·6	,, Nov. 30, 9·5±
,, Mar. 2,	9·5	1899, Feb. 4, 9·5
,, Apr. 3,	9·5	

Mean : 9·55.

Cordoba :—For mag. read 10.
The star Cor. D.M. —24° 9989 mag. 9·7
$11^h\ 44^m\ 26^s$ —24° 47′·0
was not seen on ten occasions and glimpsed as 11·5 —12·0 mag. on four occasions between 1898, Feb. 8, —1899, Feb. 4, but this would not seem to be the star observed at Cordoba, as Dr Thome writes that the above position is compounded from the following observations of two different stars.

10^m	$11^h\ 44^m\ 25^s·0$	—24° 49′·0
$9\frac{s}{4}$	11 44 26 ·8	—24 45 ·0

No. 140. $11^h\ 45^m\ 37^s$ $-32°\ 14'$ 8·9

Kapteyn :—One rejected obs. —0 (10·4).
Looked up : on *m.* and *c.* at $11^h\ 36^m$ extremely faint star, the same on *c.* at $12^h\ 0^m$. On two other plates certainly missing.
Cape :—1897, May 2, 9·2 mag.
,, June 29, 9·2 ,,
,, Aug. 2, 9·1 ,,

No. 141. $11^h\ 47^m\ 1^s$ $-29°\ 45'$ 8·9

Kapteyn :—On *c.* faint star. On the two other plates certainly missing.

mag.		mag.
Cape :—1897, May 2,	9·6	1897, Aug. 16, 9·6
,, June 29,	9·2	,, ,, 25, [9·5]
,, July 28,	9·25	1898, Jan. 7, 9·4
,, Aug. 2,	9·3	,, Feb. 8, 9·6
,, ,, 12,	9·6	,, ,, 20, 9·4

Mean : 9·45.

No. 142. $11^h\ 47^m\ 5^s$ $-31°\ 58'$ 9·0

Kapteyn :—One rejected obs. —0 (9·6).
On three plates faintly visible.
Cape :—1897, May, 2, 9·3 mag.
,, June 29, 9·3 ,,

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No. 143. $11^h\ 48^m\ 40^s$ $-33°\ 2'$ M. 8·9

Kapteyn :—One rejected obs. −o (9·6).
Looked up : doubtful traces on *m.* and *c.* On third plate certainly missing.
Cape :—1897, May 2, 9·0 mag.
,, June 29, 9·0 ,,

No. 144. $11^h\ 48^m\ 40^s$ $-33°\ 34'$ 9·0

Kapteyn :—On *c.* doubtful traces. On both other plates certainly missing.

	mag.		mag.
Cape :—1897,	May 2, 9·2	1897, Aug. 16,	9·4
,,	June 29, 9·25	,, ,, 25,	9·25
,,	July 28, 9·3		

Mean : 9·3.

No. 145. $11^h\ 48^m\ 48^s$ $-31°\ 37'·9$ 9·0

Cape :—1897, May 2—Aug. 25. Invisible, 5 *n.*
Cordoba :—Misprint, δ should be $-31°\ 47'·9$.
On 1897, Aug. 16, it is noted that a star near here, given as 9·9 mag. in Cor. D.M., is only 11th mag.

No. 146. $11^h\ 48^m\ 51^s$ $-33°\ 42'$ 8·9

Kapteyn :—One rejected obs. −o (9·6).
Looked up ; perhaps a faint star on both *m.* and *c.*, on third plate certainly missing.

	mag.		mag.
Cape :—1897,	May 2, 9·0	1897, Aug. 16,	9·35
,,	June 29, 9·0	,, ,, 25,	9·15
,,	July 28, 9·2		

Mean : 9·1.

No. 147. $11^h\ 49^m\ 58^s$ $-33°\ 34'$ 9·0

Kapteyn :—Doubtful traces on *m.* and *c.* Certainly missing on third plate.
Cape :—1897, May 2, 9·3 mag., reddish.
,, June 29, 9·2 ,,
,, July 28, 9·25 ,,
,, Aug. 16, 9·3 ,,
,, ,, 25, 9·2 ,,
Mean : 9·25.
In Cor. D.M. there is a 9·6 mag. star at $11^h\ 49^m\ 58^s·5$ $-33°\ 32'·9$. This was invisible 1897, May —Aug., and 1900, Mar.

No. 148. $11^h\ 50^m\ 3^s$ $-33°\ 35'$ 8·7

Kapteyn :—Certainly missing on three plates.

	mag.		mag.
Cape :—1897,	May 2, 9·3	1897, Aug. 16,	9·25
,,	June 29, 9·3	,, ,, 25,	9·1
,,	July 28, 9·55		

Mean : 9·3.
A suspicion of variability ; reobserved as follows :—

	mag.		mag.
1900, Mar.	22, 9·7	1900, May 8,	9·3
,, ,,	30, 9·6	,, Aug. 20,	9·15
,, Apr.	8, 9·3		

Probably slightly variable.

No. 149. $11^h\ 53^m\ 29^s$ $-33°\ 21'$ 9·0

Kapteyn :—One obs. −o (9·6).
Looked up ; doubtful traces on both *m.* and *c.* Certainly missing on third plate.

	mag.		mag.
Cape :—1897,	May 4, 9·0	1897, Aug. 16,	9·2
,,	Aug. 2, 9·0	,, ,, 25,	9·2

No. 150. $11^h\ 53^m\ 54^s$ $-33°\ 53'$ M. 8·9

Kapteyn :—One rejected obs. on plates $35\frac{1}{2}°$ (9·4).
Looked up on the plates of region $31\frac{1}{2}°$, $12^h\ 0^m$. Extremely faint star on *c.*, certainly missing on the two other plates.
Cape :—1897, May 4, 8·7 mag. (orange).
,, Aug. 2, 9·0 ,,
,, ,, 16, 9·15 ,,
,, ,, 25, 8·95 ,,

No. 151. $12^h\ 2^m\ 42^s$ $-32°\ 55'$ 8·9

Kapteyn :—Extremely faint star on *m.* and *c.* Certainly missing on third plate.
Cape :—1897, May 4, 9·2 mag., red.
,, ,, 13, 9·1 ,,
,, Aug. 2, 9·15 ,,

No. 152. $12^h\ 8^m\ 9^s$ $-32°\ 0'$ 9·0

Kapteyn :—Of three plates, only the *c.* contains a very faint star.
Cape :—1897, May 4, 9·4 mag.
,, ,, 13, 9·2 ,,
,, Aug. 2, 9·2 ,,

No. 153. $12^h\ 17^m\ 52^s$ $-31°\ 48'$ 9·0

Kapteyn :—Doubtful traces on *m.* and *c.* ; certainly missing on third plate.
Cape :—1897, Apr. 30, 9·2 mag.
,, May 13, 9·4 ,,
,, Aug. 2, 9·5 ,, no good comparison.
,, ,, 13, 9·4 ,,
Mean : 9·4.

No. 154. $12^h\ 20^m\ 48^s$ $-31°\ 53'$ 8·5

Kapteyn :—On *c.* extremely faint star ; certainly missing on two other plates.
Cape :—1897, Apr. 29, 9·3 mag.
,, May 5, 9·5 ,,
,, ,, 13, 9·2 ,,
,, Aug. 2, 9·5 ,,
,, ,, 12, 9·0 ,,
,, ,, 13, 9·1 ,, (red).
,, ,, 16, 9·3 ,,
1898, Feb. 22, 9·35 ,,
,, Apr. 3, 9·2 ,,
Mean : 9·3.

No. 155. $12^h\ 22^m\ 40^s$ $-37°\ 34'$ 8·8

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1898, May 3, 8·9 mag., redness = 9, a remarkable object.
,, July 18, 8·9 mag., very red = 9.
1900, Mar. 22, 9·3 ,, red.
,, ,, 30, 9·2 ,, ,, 8.
,, Aug. 20, 9·3 ,, ,, 7.
Mean : 9·1 red 8·2.

No. 156. $12^h\ 33^m\ 38^s$ $-29°\ 57'$ 9·0

Kapteyn :—One rejected obs. −o (9·6).
Plates referred to. Extremely faint star on three plates $12^h\ 48^m$.

	mag.		mag.
Cape :—1897,	Apr. 29, 9·3	1897, May 31,	9·6
,,	May 5, 9·35	,, Aug. 2,	9·3
,,	,, 13, 9·6	,, ,, 12,	9·4

Mean : 9·4.

No. 157. $12^h\ 34^m\ 12^s$ $-33°\ 53'$ M. 8·7

Kapteyn :—One rejected obs. (9·4) on plates $35\frac{1}{2}°$, $12^h\ 37^m\ 54^s$.
Plates referred to. On plate $31\frac{1}{2}°$, $12^h\ 48^m$. Very faint star on *c.* and *m.* Certainly missing on third plate.

	mag.		mag.
Cape :—1897,	Apr. 27, 9·5	1897, Aug. 12,	9·2
,,	,, 30, 9·2	,, ,, 13,	9·2
,,	May 2, 9·2	,, ,, 16,	9·2
,,	,, 5, 9·1	1898, Mar. 2,	9·25
,,	,, 13, 9·2	,, ,, 11,	9·1
,,	,, 31, 9·4	,, Apr. 3,	9·2
,,	Aug. 2, 9·0		

Mean : 9·2.
Cordoba :—1888, Mar. 13, 9 mag.
1889, Feb. 24, $8\frac{3}{4}$,,

No. 158. $12^h\ 37^m\ 9^s$ $-32°\ 6'$ 9·0

Kapteyn :—Certainly missing on three plates.
Cape :—1897, Apr. 27, 9·1 mag.
,, ,, 30, 9·2 ,,
,, May 5, 9·35 ,,
,, ,, 13, 9·45 ,,
,, ,, 31, 9·4 ,, } certainly variable comparison stars excellent.
,, Aug. 2, 9·15 ,, }
,, ,, 12, 9·5 ,,
,, ,, 13, 9·4 ,,
,, ,, 16, 9·4 ,,
,, ,, 20, 9·5 ,,
,, ,, 25, 9·4 ,,
,, ,, 28, 9·5 ,,
,, ,, 29, 9·5 ,,
,, Sept. 3, 9·5 ,,
1898, Feb. 22, 9·35 ,,
,, Mar. 2, 9·3 ,,
,, ,, 11, 9·2 ,,
,, Apr. 3, 9·3 ,,
,, ,, 7, 9·3 ,,
,, ,, 13, 9·25 ,,
,, ,, 20, 9·5 ,,
,, ,, 26, 9·3 ,,
,, ,, 29, 9·35 ,,
,, May 2, 9·35 ,,
,, ,, 7, 9·15 ,, good.
,, ,, 13, 9·2 ,,
,, ,, 15, 9·35 ,,
,, ,, 18, 9·2 ,,
,, ,, 19, 9·25 ,,
,, ,, 21, 9·3 ,,
,, June 1, 9·3 ,,
,, ,, 6, 9·4 ,,
,, ,, 25, 9·3 ,,
,, ,, 30, 9·35 ,,
,, July 8, 9·5 ,,
,, ,, 18, 9·15 ,,
,, ,, 20, 9·4 ,,
,, ,, 25, 9·4 ,,
,, Aug. 4, 9·4 ,,
,, ,, 12, 9·35 ,,
,, ,, 15, 9·35 ,,
,, ,, 24, 9·4 ,,
,, Nov. 30, 9·3 ,,
1899, Feb. 4, 9·4 ,,
,, ,, 27, 9·3 ,,
,, Mar. 17, 9·25 ,,
,, Apr. 28, 9·25 ,,
,, May 20, 9·25 ,,
,, Aug. 20, 9·4 ,, good.
Cordoba :—Read 9·9 mag.

No. 159. $12^h\ 37^m\ 41^s$ $-33°\ 34'$ 8·7

Kapteyn :—Very faint star on *c.* and *m.* Certainly missing on third plate.
Cape :—1897, Apr. 28, 8·8 mag.
,, ,, 30, 9·0 ,,

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Cape :—1897, May 5, 8·7 mag.
,, ,, 13, 9·0 ,,
,, ,, 31, 8·8 ,, red.
1900, Mar. 22. 8·8 ,,
The scale used is that of the Cor. D.M. An independent estimate would give about $9\frac{1}{2}^m$.

No. 160. $12^h\ 40^m\ 46^s$ $-29°\ 22'$ M. 8·9

Kapteyn :—Extremely faint star on *c.* and *m.* Certainly missing on third plate.

	mag.		mag.
Cape :—1897, Apr. 28,	9·5	1897, May 21,	9·5 *
,, ,, 30,	9·3 *	,, Aug. 2,	9·2 *
,, May 5,	9·5 ±	,, ,, 12,	9·4 *
,, ,, 13,	9·4		

Mean : 9·4.
* No good comparison stars.

No. 161. $12^h\ 47^m\ 57^s$ $-33°\ 24'$ 9·0

Kapteyn :—One rejected obs. —o (9·9).
Plates referred to ; both on *c.* and *m.* very faint star, on third plate missing.
Cape :—1897, Apr. 28, 8·9 mag.
,, ,, 30, 8·7 ,,
,, May 5, 8·8 ,,
,, ,, 13, 8·8 ,,
,, Aug. 2, 8·9 ,, reddish.

No. 162. $12^h\ 49^m\ 44^s$ $-36°\ 17'$ 9·0

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—15 observations between 7th May and 30th Nov. in 1898, range from 10·3 to 11·0 mag.
10 observations between 4th Feb. and 2nd Sept. in 1899, range from 10·3 to 11·0 mag.
The observations below 10th mag. are not very reliable and the only inference to be drawn is that the star is certainly below $10\frac{1}{2}$ mag.
1900, Apr. 18, 11·5 mag. } near position.
,, July 6, 10·5 ,, }
1901, Mar. 31, 10·5 ,,
Cordoba :—1888, Mar. 14, 8·7 mag. } $12^h\ 49^m\ 49^s$
1889, ,, 30, 9·3 ,, } $-35°\ 57'$
Hence the star observed here is not the Cordoba star.
The neighbouring star $12^h\ 49^m\ 36^s$—36° 26′·8 given as 9·7 mag. in Cor. D.M. and 9·6 mag. in C.P.D. was noted = 9·0 mag. (7.5.98.)

No. 163. $12^h\ 50^m\ 11^s$ $-32°\ 50'$ 8·9

Kapteyn :—One rejected obs. —o (9·9).
Plates referred to. Both on *c.* and *m.* very faint star, on third plate certainly missing.
Cape :—1897, Apr. 28, 9·0 mag. red.
,, ,, 30, 9·0 ,, reddish.
,, May 13, 9·0 ,,

No 164. $12^h\ 56^m\ 12^s$ $-31°\ 38'$ 9·0

Kapteyn :—One rejected obs. —o (9·9).
Plates referred to. Both on *c.* and *m.* very faint star. On third plate certainly missing.
Cape :—1897, Apr. 28, 9·0 mag.
,, ,, 29, 9·0 ,,
,, May 13, 9·0 ,,
,, ,, 21, 9·0 ,,
,, Aug. 2, 9·1 ,, reddish.
The star Cor. D.M. —31°, 10,048 10^m (but misprinted 9·7) was noted as invisible on several occasions. There was but one observation of it at Cordoba.

No. 165. $13^h\ 2^m\ 38^s$ $-29°\ 17'$ M. 9·0

Kapteyn :—Doubtful traces on *c.* On two other plates certainly missing.
Cape :—1897, May 4, 9·4 mag.
,, ,, 13, 9·5 ,,
,, ,, 21, 9·5 ,,
,, Aug. 2, 9·4 ,, reddish.
,, ,, 12, 9·2 ,,
,, ,, 20, 9·2 ,,
,, ,, 25, 9·2 ,,
,, ,, 28, 9·1 ,,
,, Sept. 3, 9·1 ,,
1898, Mar. 11, 9·4 ,, reddish.
,, Apr. 3, 9·3 ,,
Mean : 9·3.

No. 166. $13^h\ 3^m\ 45^s·2$ $-35°\ 47'·4$ 9·0

Kapteyn :—On *m.* and *c.* certainly missing, only one star as follows :—9·0, $3^m\ 55^s·6$ $-35°\ 47'·4$.
Cordoba :—Two stars as follows :—
9·0 $3^m\ 45^s·2$ $-35°\ 47'·4$.
9·3 55·5 47·5.
Cape :—1898, May 7. Not seen, the star at 55^s is 9·0, not 9·3 as in Cor. D.M.
,, ,, 15. Not seen, the 9·3 at 55^s should be 9·0.
Misprint. Declination —35° 47′·4 read —35° 38′·4.
The C.P.D. has a star in the corrected position, viz. :— C.P.D. —35°, 5649, $9^m·2$, $13^h\ 3^m\ 45^s·1$ —35° 38′·5.

No. 167. $13^h\ 3^m\ 47^s$ $-33°\ 11'$ 9·0

Kapteyn :—One rejected obs. —o (9·7).
Plates referred to. Both on *c.* and *m.* very faint star, on third plate certainly missing.
Cape :—1897, May 4, 9·1 mag.
,, ,, 13, 9·3 ,,
,, ,, 21, 9·2 ,,
,, ,, 22, 9·0 ,,
,, ,, 31, 9·5 ,, red.
,, June 2, 9·3 ,,
,, ,, 8, 9·3 ,,
,, Aug. 2, 9·1 ,,
,, ,, 12, 8·95 ,,
,, ,, 20, 9·0 ,,
1898, Mar. 2, 9·3 ,,
,, ,, 11, 9·4 ,, reddish.
,, Apr. 3, 9·0 ,,
,, ,, 7, 9·3 ,,
,, ,, 13, 9·3 ,,
,, June 6, 8·95 ,,
,, July 18, 9·2 ,,
,, Aug. 4, 9·0 ,,
1899, Feb. 2, 9·0 ,,
There are good comparison stars and some of the variation shown is probably real. A period of 31 days is roughly indicated.

No. 168. $13^h\ 4^m\ 43^s$ $-24°\ 7'$ 9·0

Kapteyn :—Doubtful traces on *c.* and *m.*, on third plate certainly missing.
Cape :—1897, May 4–Aug. 25, 7 obs. range 9·7–9·9. Mean : 9·8.
Cordoba :—Misprint, mag. = 9·9.

No. 169. $13^h\ 12^m\ 34^s$ $-29°\ 20'$ 9·0

Kapteyn :—One rejected obs. —o (9·7).
Plates referred to. Both on *c.* and *m.* an extremely faint star, on third plate certainly missing.
Cape :—1897, May 12, 9·1 mag.
,, ,, 21, 8·95 ,,
,, ,, 22, 9·15 ,,
1902 ,, 27, 9·4 ,, indept. estimate.

No. 170. $13^h\ 12^m\ 44^s$ $-29°\ 9'$ M. 9·0

Kapteyn :—Two obs. —o (9·7). Was rejected on account of a doubt about its stellar nature. Plates referred to, both on *c.* and *m.* star very faintly visible, on third plate certainly missing.
Cape :—1897, May 12, 9·2 mag.
,, ,, 21, 9·0 ,,
,, ,, 22, 9·2 ,,
1902 ,, 27, 9·5 ,, indept. estimate.

No. 171. $13^h\ 18^m\ 41^s$ $-31°\ 6'$ 9·0

Kapteyn :—Two obs. —o (9·7). Was rejected on account of a doubt about its stellar nature. Plates referred to. Doubtful traces on both *m.* and *c.* On third plate certainly missing.
Cape :—1897, May 12, 8·9 mag.
,, ,, 21, 9·1 ,,
,, ,, 22, 9·0 ,,
,, ,, 31, 9·1 ,,
,, Aug. 2, 9·4 ,,
,, ,, 5, 9·0 ,,
,, ,, 12, 8·9 ,, no good comparison.
,, ,, 16, 8·9 ,,
,, ,, 20, 9·0 ,,
,, ,, 25, 9·1 ,,
,, Sept. 3, 9·0 ,,
1898, Mar. 11, 9·0 ,,
Mean : 9·03.

No. 172. $13^h\ 22^m\ 53^s$ $-22°\ 38'$ 8·4

R Hydræ :—see C.P.D. I. *Introd.* (p. 75) No. 99.

No. 173. $13^h\ 26^m\ 13^s$ $-30°\ 12'$ 9·0

Kapteyn :—One rejected obs. —o (10·4).
Plates referred to. Extremely faint star both on *c.* and *m.* On third plate certainly missing.

	mag.		mag.
Cape :—1897, May 13,	9·9	1897, June 2,	9·5
,, ,, 21,	9·5	,, Aug. 2,	9·5
,, ,, 22,	9·6	,, ,, 12,	9·5
,, ,, 31,	9·6 red	,, ,, 20,	9·5

Mean : 9·6.

No. 174. $13^h\ 26^m\ 39^s$ $-31°\ 1'·5$ 9·0

Kapteyn :—Certainly missing on three plates.
Cape :—Invisible on five occasions between May 12, 1897, and Aug. 12, 1897.
Cordoba :—Misprints, should be 9·4 mag. at $\delta = -32°\ 1'·5$.

No. 175. $13^h\ 38^m\ 11^s$ $-31°\ 12'$. 9·0

Kapteyn :—One rejected obs. —o (10·4).
Plates referred to. Extremely doubtful traces on *c.* and *m.* On third plate certainly missing.

	mag.		mag.
Cape :—1897, May 12,	9·2	1897, June 2,	9·4
,, ,, 21,	9·4	,, Aug. 2,	9·3
,, ,, 31,	9·2		

Mean : 9·3.

No. 176. $13^h\ 41^m\ 2^s$ $-36°\ 14'$ 9·0

Kapteyn :—On the four plates *m.* and *c.* $-35\frac{1}{2}°$ $13^h\ 28^m\ 25^s$, and *m.* and *c.* $-35°$ $13^h\ 53^m\ 41^s$ certainly missing,
See *Introduction* C.P.D. I. List I. No. 103.
Cape :—Variable, = 4935, RT Centauri.

No. 177. $13^h\ 42^m\ 56^s$ $-24°\ 52'$ 9·0

Kapteyn :—One rejected obs. —o (9·9).
Cordoba :—Misprint, should be 9·9 mag.

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No. 178. $13^h\ 48^m\ 46^s$ $-32°\ 35'$ M. 9·0

Kapteyn:—Extremely faint star on *c.* and *m.* Certainly missing on third plate.
Cape:—1897, May 12, 9·0 mag.
,, ,, 21, 9·3 ,,
,, ,, 31, 9·2 ,, redness = 8.

No. 179. $13^h\ 51^m\ 22^s$ $-32°\ 22'$ 9·0

Kapteyn:—One rejected obs. −0 (9·5).
Plates referred to. Faint star both on *c.* and *m.* On third plate certainly missing.
Cape:—1897, May 12, 9·0 mag.
,, ,, 21, 9·0 ,,

No. 180. $13^h\ 52^m\ 3^s$ $-30°\ 59'$ 9·0

Kapteyn:—Certainly missing on three plates.
Cape:—1897, May 12–Aug. 25, 7 obs. range 9·7–9·9. Mean = 9·8.
Cordoba;—Misprint, mag. = 10.
Observations, 10, 10 and 9·7.

No. 181. $13^h\ 54^m\ 50^s$ $-32°\ 33'$ 9·0

Kapteyn:—Certainly missing on three plates.
Cape:—1897, May 12, 9·0 mag.
,, ,, 21, 8·9 ,,
,, ,, 31, 9·0 ,, red = 7·5.
,, June 2, 9·0 ,, about 1′ North of position given.

No. 182. $14^h\ 1^m\ 33^s$ $-29°\ 7'$ 8·7

Kapteyn:—Certainly missing on three plates.
Cape:—1897, Apr. 26, 9·5 mag.
,, May 12, 9·2 ,,
,, ,, 13, 9·6 ,,
,, ,, 21, 9·3 ,,
,, ,, 22, 9·4 ,,
,, ,, 31, 9·5 ,, red = 8.
,, June 2, 9·5 ,,
,, ,, 8, 9·35 ,,
,, Aug. 5, 9·35 ,,
,, ,, 12, 9·2 ,, no good comparison.
Means: 9·4 ,, colour 8.

No. 183. $14^h\ 3^m\ 17^s$ $-29°\ 1'$ 9·0

Kapteyn:—Two obs. −0 (9·5). Was rejected on account of a doubt about its stellar nature. Plates referred to. Doubtful traces on *c.* and *m.* On third plate certainly missing.
Cape:—1897, May 12, 9·1 mag.
,, ,, 21, 9·1 ,,
,, ,, 31, 8·9 ,,
,, Aug. 5, 9·1 ,, (reddish).

No. 184. $14^h\ 6^m\ 33^s$ $-33°\ 10'$ 9·0

Kapteyn:—Certainly missing on three plates.
Cape:—1897, May 20, 9·2 mag.
,, ,, 21, 9·5 ,,
,, ,, 22, 9·3 ,,
,, ,, 31, 9·2 ,, (red).
,, June 2, 9·2 ,,
,, ,, 8, 9·2 ,,
,, Aug. 5, 9·25 ,,
,, ,, 12, 9·25 ,,
,, ,, 20, 9·3 ,,
,, ,, 25, 9·2 ,,
Mean: 9·26 ,, (red).

The neighbouring star (Cor. D.M. −33° No. 9648) is called 9·7 by the Cordoba observers. The mean of 11 observations between 1897, May 21 and 1898, Apr. 3, give 10·9 mag., range 10 to 11·5.

No. 185. $14^h\ 13^m\ 41^s$ $-33°\ 9'$ M. 9·0

Kapteyn:—Extremely faint star on *c.* and *m.* Certainly missing on third plate.
Cape:—1899, Sept. 1, 9·0 mag.

No. 186. $14^h\ 21^m\ 36^s$ $-33°\ 44'$ 8·7

Kapteyn:—Extremely faint star on *c.* and *m.* Certainly missing on third plate.
Cape:—1897, Apr. 26, 9·0 mag.
,, May 13, 9·0 ,,
,, ,, 21, 9·0 ,,
,, Aug. 5, 9·1 ,,
,, ,, 12, 9·0 ,,
,, ,, 20, 9·0 ,,
Mean: 9·02.

No. 187. $14^h\ 25^m\ 4^s$ $-29°\ 8'$ 9·0

Kapteyn:—Two obs., −0 (9·7). Was rejected on account of a doubt about its stellar nature. Plates referred to. Very faintly visible on three plates.
Cape:—1897, May 12, 9·05 mag.
,, ,, 21, 9·1 ,,
,, ,, 31, 9·0 ,,

No. 188. $14^h\ 29^m\ 22^s$ $-32°\ 57'$ 9·0

Kapteyn:—Certainly missing on three plates.
Cape:—1897, June 1, 9·0 mag.
,, ,, 2, 9·2 ,,
,, ,, 8, 9·2 ,, (reddish).

No. 189. $14^h\ 32^m\ 14^s$ $-29°\ 17'$ 9·0

Kapteyn:—Both on *c.* and *m.* very faint star. Certainly missing on third plate.
Cape:—1897, June 1, 9·1 mag. no comparison star.
,, ,, 8, 9·0 ,, ,,
,, Aug. 12, 9·1 ,, ,,

No. 190. $14^h\ 35^m\ 25^s$ $-32°\ 49'$ 9·0

Kapteyn:—Of the three plates of the region $14^h\ 24^m$ only the *c.* contains a very faint star here. On both the plates of $14^h\ 48^m$ extremely faint traces.
Cape:—1897, June 1, 9·3 mag.
,, ,, 8, 9·3 ,,
,, Aug. 5, 9·3 ,,

No. 191. $14^h\ 41^m\ 23^s$ $-28°\ 21'$ 9·0

Kapteyn:—Certainly missing on three plates.

	mag.		mag.
Cape:—1897, June	1, 9·95	1897, Aug. 12,	10·5
,, ,,	8, 9·9	,, ,,	25, 10·5
,, ,,	29, 10·5	,, Sept.	3, 10

Mean: 10·2.

Cordoba:—Misprint for 10^m; three obs. = 10, 10 and 10.

No. 192. $14^h\ 42^m\ 46^s$ $-37°\ 43'·0$ 9·0

Kapteyn:—Cordoba has the following stars,
(9·0) $14^h\ 42^m\ 46^s$ $-37°\ 43'·0$
(10) 42 53 43·9
On three plates there is certainly only the star,
(9·8) $14^h\ 42^m\ 53^s$ $-37°\ 43'·3$
Cape:—1898, May 15. Two stars seen, mags. as in Cor. D.M.
1898, May 29. There is a 9·0 mag. at $14^h\ 42^m\ 52^s$ ±, and a 10 mag. about 5 secs. *f.* 1′ S. These seem to be Cor. D.M. stars with an error in R.A. No stars in position given by Cor. D.M.
Cordoba:—Read $52^s·9$.
Note.—Cor. D.M. Nos. 9731, 9735 and 9740 are coarse doubles.

No. 193. $14^h\ 45^m\ 29^s$ $-25°\ 39'$ M. 9·0

Kapteyn:—One rejected obs. −0 (9·9).
Cape:—1897, June 1, 9·0 mag.
,, ,, 8, 9·0 ,,
,, Aug. 5, 9·15 ,,

No. 194. $14^h\ 52^m\ 25^s$ $-32°\ 24'$ 9·0

Kapteyn:—One rejected obs. −0 (9·9).
Plates referred to. Extremely faint star on *c.* and *m.*

	mag.		mag.
Cape:—1897, June	1, 9·5	1897, Oct.	2, 9·6
,, ,,	8, 9·35	,, ,,	3, 9·7
,, ,,	30, 9·3	1898, Mar.	11, 9·5
,, July	31, 9·5	,, Apr.	7, 9·4
,, Aug.	5, 9·1	,, ,,	26, 9·3
,, ,,	12, 9·25	,, ,,	29, 9·4
,, ,,	16, 9·0	,, May	21, 9·45
,, ,,	20, 9·2	,, ,,	26, 9·45
,, ,,	25, 8·95	,, June	6, 9·4
,, ,,	28, 9·4 good	,, ,,	14, 9·4
,, ,,	29, 9·6	,, ,,	18, 9·4
,, ,,	31, 9·6	,, July	25, 9·45
,, Sept.	2, 9·6	,, Aug.	6, 9·25
,, ,,	3, 9·3	,, ,,	12, 9·4
,, ,,	17, 9·4	1899, Feb.	2, 9·5
,, ,,	24, 9·5		

Mean: 9·42.

The range 8·95 to 9·7 is very large but the observations do not show any periodicity. In the field there is a star S *f.* (Cor. D. M.—32° No. 10,527) given by Cordoba as 9·0. The mean of 9 observations gives 9·2 mag.

No. 195. $14^h\ 54^m\ 57^s$ $-38°\ 22'$ 9·0

Kapteyn:—One rejected obs. −0 (10·1).
Cape:—1898, May 18, 9·2 mag. (yellow)
,, ,, 21, 9·2 ,,
,, ,, 26, 9·0 ,,
,, Aug. 6, 9·15 ,,

No. 196. $14^h\ 57^m\ 19^s$ $-38°\ 52'$ 9·0

Kapteyn:—One rejected obs. −0 (10·1).
Cape:—1898, May 15, 9·0 mag.
,, July 25, 9·0 ,,

No. 197. $14^h\ 58^m\ 34^s$ $-34°\ 26'$ 8·5

Kapteyn:—One rejected obs. −0 (9·8).
Cape:—1898, May 15, 8·9 mag.
,, ,, 21, 8·95 ,,
,, ,, 26, 8·8 ,,
,, ,, 29, 8·7 ,,
,, June 10, 8·6 ,, red 7·5.
,, July 25, 8·7 ,,
1900, Mar. 23, 8·6 ,, red 6.

No. 198. $14^h\ 59^m\ 49^s$ $-28°\ 48'$ 9·0

Kapteyn:—Very doubtful traces both on *c.* and *m.*

	mag.		mag.
Cape:—1897, June	1, 9·7	1897, Aug.	5, 9·2
,, ,,	8, 9·2	,, ,,	12, 9·3
,, ,,	30, 9·2	,, ,,	20, 9·2
,, July	31, 9·4		

Mean: 9·3.

No. 199. $15^h\ 0^m\ 37^s$ $-34°\ 46'$ 8·9

Kapteyn:—Extremely doubtful traces on *m.* and *c.*
Cape:—1898, May 18, 9·1 mag. (reddish).
,, ,, 21, 8·9 ,,
,, ,, 26, 8·8 ,,
,, ,, 29, 8·8 ,,
,, July 25, 8·9 ,, (reddish).

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No. 200. $15^h\ 1^m\ 21^s$ $-34°\ 44'$ M. 9·0

Kapteyn:—In Z.C. 9·0 mag. Extremely doubtful traces on plates.
See also List I. No. 114.

No. 201. $15^h\ 13^m\ 39^s$ $-28°\ 42'$ 8·9

Kapteyn:—Certainly missing on *c.* and *m.*
Cape:—1897, June 1, 9·0 mag. (red).
,, ,, 8, (9·1) ,,
,, ,, 30, 9·0 ,, no good comparison.

No. 202 $15^h\ 17^m\ 19^s$ $-36°\ 23'$ 9·0

Kapteyn:—Certainly missing on *m.* and *c.*

mag.		mag.
Cape:—1898, May 18, 9·95		1898, June 10, 10·2
,, ,, 29, 10·0±		,, July 25, 9·95
,, June 1, 10·0		

Cordoba:—Misprint, for 9·0 mag. read 10 mag. (three observations = 10). But in A.N. No. 3784 to read 9·6 mag. and in Cor. Results, Vol. 18, read 9·9 mag.

No. 203. $15^h\ 20^m\ 35^s$ $-41°\ 38'·2$ 9·0

Kapteyn:—Certainly missing on four plates.
Cape:—1898, May 18, Invisible.
,, July 9, ,,
,, Oct. 7, ,,
Cordoba:—Dec. in error, should be 41° 29'·6. Erase Cor. D.M.—41°, 9936. But in A.N. No. 3784, Dr Thome says "Object only seen once, observation apparently correct."

No. 204. $15^h\ 21^m\ 28^s$ $-38°\ 34'$ 9·0

Kapteyn:—One rejected obs. −0 (9·6).
Cape:—1898, May 26, 9·2 mag. ±, clouds.
,, June 1, 9·3 ,,
,, ,, 8, 9·3 ,,

No. 205. $15^h\ 24^m\ 37^s$ $-31°\ 21'$ 9·0

Kapteyn:—Extremely faint star both on *c.* and *m.*
Cape:—1897, June 2, 9·2 mag.
,, ,, 8, 9·4 ,,
,, ,, 30, 9·5 ,,
,, July 31, 9·3 ,,
,, Aug. 5, 9·2 ,,
,, ,, 12, 9·2 ,,
,, ,, 20, 9·25 ,,
,, ,, 25, 9·35 ,,
,, ,, 29, 9·2 ,,
,, Sept. 3, 9·1 ,, reddish.
,, ,, 17, 9·15 ,,
,, ,, 24, 9·2 ,,
,, Oct. 2, 9·2 ,,
1898, Mar. 11, 9·3 ,,
,, Apr. 7, 9·45 ,,
,, ,, 29, 9·4 ,,
,, May 2, 9·3 ,,
,, ,, 7, 9·35 ,,
,, June 1, 9·2 ,,
Mean: 9·3 reddish.

No. 206. $15^h\ 25^m\ 7^s$ $-35°\ 12'$ 8·9

Kapteyn:—One rejected obs. −0 (9·7).
Cape:—1898, May 26, 9·0 mag.
,, June 1, 9·0 ,,
,, Aug. 6, 9·2 ,,

No. 207. $15^h\ 25^m\ 13^s$ $-39°\ 20'$ 9·0

Kapteyn:—Certainly missing on four plates.
Cape:—1898, May 26. There are three stars near here, 10, 10 and 10·5, the faintest is perhaps the nearest to position given.
Cape:—1898, May 29. 10± near position.
,, Aug. 6. No star here as bright as 9·8.
,, ,, 18. No star here as bright as 9·9.
,, Oct. 17. No star here as bright as 10.
Cordoba:—Misprint, for 9·0 read 10. Observed twice as 10.

No. 208. $15^h\ 28^m\ 1^s$ $-31°\ 34'$ M. 9·0

Kapteyn:—One rejected obs. −0 (9·7).
Was rejected on account of a doubt about its stellar nature. Plates refered to. Very faint star on both *c.* and *m.*
Cape:—1897, June 2, 9·0 mag.
,, ,, 8, 8·95 ,,
,, ,, 30, 8·9 ,,
The map made from the Cor D.M. does not agree well with the sky.

No. 209. $15^h\ 28^m\ 5^s$ $-35°\ 12'$ 9·0

Kapteyn:—One rejected obs. −0 (9·7).
Cape:—1898, May 26, 9·35 mag.
,, June 1, 9·0 ,,
,, Aug. 6, 9·2 ,,

No. 210. $15^h\ 30^m\ 43^s$ $-28°\ 37'$ 9·0

Kapteyn:—One rejected obs. −0 (10·0).

mag.	
Cape:—1897, June 5, 9·0	
,, ,, 30, 9·0	no good comparison.
,, July 31, 9·5	
,, Aug. 5, 9·2	
,, ,, 13, 8·9 red 6.	
,, ,, 20, 8·9	

Mean: 9·1.
There is a small double star = 9·9 mag. closely N. *pr.*

No. 211. $15^h\ 32^m\ 26^s$ $-37°\ 53'$ 9·0

Kapteyn:—One rejected obs. −0 (9·7).
Cape:—1898, May 26, 9·4 mag.
,, June 1, 9·4 ,,
,, Aug. 6, 9·2 ,,
Note:—The mags. of 10,419 and 10,421 are apparently interchanged in the Cor. D.M.

No. 212. $15^h\ 34^m\ 56^s$ $-34°\ 22'$ 9·0

Kapteyn:—One rejected obs. −0 (9·7).
Cape:—1898, May 26, 9·5 mag.
,, June 1, 9·5 ,,
,, Aug. 6, 9·4 ,,

No. 213. $15^h\ 36^m\ 46^s$ $-38°\ 1'$ 9·0

Kapteyn:—There are two rejected observations; one, −0 (9·7) on the plates—35½°, $15^h\ 34^m\ 34^s$, and one on the plates —40½°, $15^h\ 33^m\ 20^s$, −0 (9·6).
Inserted in list of errata to C.P.D.
Cape:—1898, May 27, [8·9 mag. C.D.M. scale] = 9·6.
,, June 1, 9·5 ,,
,, ,, 8, 9·4 ,,
,, ,, 10, 9·3 ,,
,, ,, 14, 9·4 ,,
,, ,, 18, 9·5 ,,
,, July 9, 9·5 ,,
Mean: 9·5.
A star *pr.*, which is called 8·5 in Cor. D.M., was estimated = 9·2, as in the C.P.D.

No. 214. $15^h\ 42^m\ 43^s$ $-38°\ 28'$ M. 9·0

Kapteyn:—One rejected obs. −0 (9·6).

mag.		mag.
Cape:—1898, May 27, 9·3		1898, Aug. 31, 9·1
,, June 1, 9·35		,, Sept. 13, 9·3

No. 215. $15^h\ 44^m\ 46^s$ $-40°\ 28'$ 9·0

Kapteyn:—Certainly missing on four plates.

mag.		mag.
Cape:—1898, May 27, 9·9		1898, July 15, 9·8
,, June 1, 9·9		,, Sept. 13, 9·9

Cordoba:—Misprint, for 9·0 read 10 (2 observations = 10).

No. 216. $15^h\ 45^m\ 21^s$ $-35°\ 56'$ 8·9

Kapteyn:—R Lupi.
See also List I. No. 126.

No. 217. $15^h\ 47^m\ 47^s$ $-29°\ 54'$ 9·0

Kapteyn:—One rejected obs. −0 (10·0).
Was rejected on account of a doubt about its stellar nature. Plates referred to. Faint star on both *c.* and *m.*
Cape:—1897, June 5, 9·4 mag.
,, ,, 30, 9·4 ,,
,, July 31, 9·2 ,, no good comparison.
,, Aug. 5, 9·2 ,,
,, ,, 13, 9·2 ,,
,, ,, 5. Star at $15^h\ 47^m\ 0^s$ −30° 3'·5 is 10 mag. not 9·5 as in Cor. D.M.

No. 218. $15^h\ 58^m\ 33^s$ $-35°\ 30'$ 9·0

Kapteyn:—Certainly missing on *m.* and *c.*
Cape:—1898, May 27, 9·4 mag.
,, June 1, 9·5 ,,
,, ,, 8, 9·4 ,,

No. 219. $16^h\ 8^m\ 15^s·6$ $-31°\ 50'·1$ 6·7

Kapteyn:—According to *Corrigenda Cordoba Observations* Vol. XVII., p. xxi., read mag. 10 instead of 6·7. (Observed at Cordoba, according to private communication 1888, May 5, 6·7, revision 10·0).
Cape:—1899, Sept. 19. Inv. under 10^m.
,, ,, 24, ,,
1900, June 20, ,,
,, Sept. 1, ,, under 11^m.
The star 5' N. *f.* this position given as 10^m in the Cor. D.M. is certainly not brighter than 11·5 mag.

No. 220. $16^h\ 14^m\ 21^s$ $-31°\ 23'$ 9·0

Kapteyn:—Certainly missing on both *c.* and *m.*
Cape:—Invisible on eight occasions between 1897, June 5, and 1898, May 16. The star at $16^h\ 14^m\ 47^s$ $-31°\ 15'$ = 9·7 in Cor. D.M. and = 9·8 in C.P.D. was observed on these occasions with a range of 8·5 to 9·0, mean = 8·9.
Cordoba:—For 31° 23' read 32° 2'·8.
There is a red star = 9·8 at $16^h\ 14^m\ 32^s$ −31° 30'·8 not in the Durchmusterungs.

No. 221. $16^h\ 15^m\ 57^s·4$ $-28°\ 50'·2$ 9·0

Kapteyn:—Extremely faint star on four plates. [−0 (9·6) 15^m, $57^s·7$−28° 50'·4].
Cape:—1897, June 8, 8·9 mag. redness = 8·5.
,, July 1, 8·9 ,,
,, Aug. 5, 9·15 ,,
,, ,, 13, 9·0 ,, (red).
Mean: 9·0 red.

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No. 222. $16^h\ 19^m\ 21^s$ $-33°\ 1'$ M. 9·0

Kapteyn:—Very doubtful traces on *c.* and *m.*
Cape:—1897, June 8, 9·4 mag.
,, July 1, 9·4 ,,
,, Aug. 5, 9·4 ,,

No. 223. $16^h\ 22^m\ 25^s$ $-32°\ 52'$ 8·9

Kapteyn:—Doubtful traces on both *c.* and *m.*
Cape:—1896, Sept. 3, 8·8 mag. not red.
,, ,, 7, 9·0 ,, red.
,, ,, 15, 8·6 ,, orange.
1897, July 1, 8·8 ,, ruddy.
Mean: 8·8 orange red.

No. 224. $16^h\ 34^m\ 17^s$ $-29°\ 8'$ 9·0

Kapteyn:—One obs. −0 (9·9).
Plates referred to. Faint star on both *c.* and *m.* of region $16^h\ 48^m$.
Cape:—1897, June 8, 9·0 mag. a coarse double.
,, July 1, 9·3 ,,
,, Aug. 13, 9·2 ,, a coarse double.
The 9·4 at $16^h\ 34^m\ 34^s$ $-29°\ 12\frac{1}{2}$ is double.

No. 225. $16^h\ 36^m\ 13^s$ $-38°\ 43'·6$ 9·0

Kapteyn:—Cordoba has two stars as follows:
$9^m·0$ $16^h\ 36^m\ 12^s·6$ $-38°\ 43'·6$
9 ·5 36 13 ·1 45 ·6
On plates certainly only the star,
$9^m·3$ $16^h\ 36^m\ 14^s·7$ $-38°\ 45'·2$
Cape:—1898, June 1. Both stars are there, the S. star is a coarse double 9·5 and 10·5: the N. star is 11·0.
,, June 10, 10·3 N. star.
,, ,, 18, 10·5 ,,
,, July 15, 10·5 ,,
,, Sept. 30, 10·3 ,,
Mean: 10·5.
Cordoba:—For 9·0 mag. read 10 mag.

No. 226. $16^h\ 40^m\ 4^s$ $-25°\ 57'$ 9·0

Kapteyn:—Two obs. + 0 (9·6).
Left out accidentally. See Corrigenda in Vol. II. p. xxxi.

No. 227. $16^h\ 41^m\ 54^s$ $-30°\ 59'$ 8·9

Kapteyn:—Certainly missing on *c.* and *m.* Probable error in Cor. D.M. in α −10 sec.
Cape:—1897, June 12, 9·0 mag. (white).
,, July 1, 8·9* ,, (yellow).
* in C.P.D. position, *i.e.* −10 sec.
Cordoba:—For $53^s·9$, read $43^s·9$, see Vol. XV. p. 334.

No. 228. $16^h\ 43^m\ 58^s$ $-26°\ 10'$ 8·9

Kapteyn:—One rejected obs. −0 (10·0).
Cape:—1897, June 21, 9·0 mag. (red).
,, July 1, 8·9 ,,
,, Aug. 13, 9·0 ,, (yellow).
,, ,, 31, 9·0 ,,

No. 229. $16^h\ 53^m\ 15^s$ $-28°\ 45'$ 9·0

Kapteyn:—One rejected obs. −0 (10·0).
Cape:—1897, June 21, 9·0 mag. no good comparison.
,, July 1, 9·0 ,,
,, Aug. 31, 9·3 ,,
,, Sept. 17, 9·3 ,,
Mean: 9·15.
The star 10′ N. = 9·6 in Cor. D.M. was estimated 10^m.

No. 230. $16^h\ 53^m\ 21^s$ $-39°\ 32'$ M. 9·0

Kapteyn:—One rejected obs. −0 (10·4).
Cape:—1898, June 6. Fine little double, the N. star a shade brighter, 4″, 180°, combined mag. = 9·4. This pair is in a little cluster. Pretty.

No. 231. $16^h\ 53^m\ 34^s$ $-24°\ 41'$ 8·4

Kapteyn:—Certainly missing on both *c.* and *m.*

	mag.		mag.
Cape:—1897, June	1, 9·9	1897, Sept.	17, 9·6
,, July	1, 10·0	,, ,,	25, 9·6
,, Aug.	31, 9·5	,, Oct.	23, 9·6

Mean: 9·7.
Cordoba:—Misprint for 9·8 mag.
Observed thrice, 10, 9·7 and 9·7.

No. 232. $16^h\ 55^m\ 22^s$ $-39°\ 30'$ 8·7

Kapteyn:—One rejected obs. −0 (10·4).
Cape:—1898, June 6, 9·0 mag. red = 8.
,, ,, 22, 9·2 ,, orange.
,, July 18, 9·0 ,,

No. 233. $17^h\ 7^m\ 11^s$ $-39°\ 28'$ 9·0

Kapteyn:—In Z.C. 8·5 mag. On plates extremely doubtful traces.
See List of Stars given in Catalogues of Precision but missing in C.P.D. No. 283.
Is 9·0 mag. orange-red.

No. 234. $17^h\ 7^m\ 53^s$ $-29°\ 3'$ 8·9

Kapteyn:—Two obs. −0 (10·3) in separately measured strip 28° 50′ −29° 3′. Rejected on account of its missing in principal zone.
Cape:—1897, July 28, 9·2 mag.
,, Aug. 31, 9·0 ,,
,, Sept. 5, 9·0 ,, (yellow).

No. 235. $17^h\ 9^m\ 56^s$ $-40°\ 57'$ 8·8

Kapteyn:—On plates extremely doubtful traces.
Cape:—1898, June 6, 9·0 mag. yellowish.
,, ,, 22, 9·1 ,, (orange).
,, July 25, 9·0 ,, red.

No. 236. $17^h\ 17^m\ 52^s$ $-40°\ 5'$ 9·0

Kapteyn:—In Z.C. 8·8 mag. (2 obs). Missing in four sweeps. Certainly missing on *m.* and *c.*
See List of Precision Stars No. 286. Is 8·9 mag. very red = 8·5.

No. 237. $17^h\ 30^m\ 31^s$ $-23°\ 2'·3$ 9·0

Kapteyn:—Missing in four sweeps.
In S. D., 9·3 mag.
In O. Stone, 9·4 ,,
Cape:—1899, Sept. 1, 9·0 mag. red = 7.
,, Oct. 22, 9·05 ,,

No. 238. $17^h\ 31^m\ 39^s$ $-41°\ 34'$ 8·0

Kapteyn:—In Z.C. 8·0 :—In G. 7·8 yellow. Missing in four sweeps on two pairs of plates. Certainly missing on *c.* and *m.*
See List of Precision Stars No. 290.
Is 8·1 mag., redness = 9·2.

No. 239. $17^h\ 54^m\ 27^s$ $-24°\ 15'$ 9·0

Kapteyn:—Very doubtful traces on both *c.* and *m.*
Probably Th. 10′ in error and star identical with the following one of C.P.D.:—
10·0 $17^h\ 54^m\ 23^s$ $-24°\ 25'·8$ which is missing in Thome.
Star observed in Thome's position 14″·9 as follows:—

	mag.		mag.
Cape:—1897, July	28, 10·0	1897, Sept.	14, 9·85
,, Aug.	8, 10·0	,, Oct.	3, 9·9
,, ,,	31, 9·9	,, ,,	17, 9·85
,, Sept.	5, 9·9	1898, May	16, 9·9

Mean: 9·9.
Cordoba:—Dec. = − 24° 24′·9. (Hence the star observed here is not the Cor. D.M. Star.)

No. 240*a*. $17^h\ 54^m\ 36^s$ $-25°\ 19'$ M. 7·3

Kapteyn:—On *m.* there is a little bubble in the glass so near the position of the star, that its absence cannot perhaps be asserted with perfect certainty. On *c.* star certainly missing.
In no other catalogue as far as I know.
Star "does not exist"—see *Astr. Journ.*, Vol. 16 p. 30.

No. 240*b*. $18^h\ 9^m\ 3^s$ $-22°\ 2'$ 8·9

Kapteyn:—One rejected obs. −0 (10·3). In Schönfeld's D.M. 9·9 mag.

	mag.		mag.
Cape:—1897, July	28, 10·3	1897, Sept.	14, 9·85
,, Aug.	8, 10·2	,, Oct.	3, 9·9
,, ,,	20, 9·7	,, ,,	17, 9·8
,, Sept.	5, 9·8		

Mean: 9·93.
Almost certainly a misprint in Cor. D.M. Instead of 8·9, perhaps 9·8 mag.
Cordoba:—For 8·9 mag. read 9·7 mag.

No. 241. $18^h\ 15^m\ 17^s$ $-30°\ 40'$ 9·0

Kapteyn:—One rejected obs. −0 (10·3).
Cape:—1897, July 27, 9·3 mag.
,, Aug. 8, 9·1 ,, redness = 8.
,, ,, 20, 9·3 ,,

No. 242. $19^h\ 5^m\ 23^s$ $-22°\ 59'·6$ 8·6

Kapteyn:—In Thome the two stars:—

h	m	s	°	′
8·6	19	5 22·7	−22	59·6
8·6		5 23·0		61·0.

In S.D. and C.P.D. only.
8·0 $19^h\ 5^m\ 23^s·0$ $-22°\ 60'·5$.
The two stars of Thome are probably the same.
Cordoba:—Put 8·5 mag., $19^h\ 5^m\ 22^s·9$ $-23°\ 0'·3$.

No. 243. $19^h\ 15^m\ 4^s$ $-39°\ 45'·6$ 9·0

Kapteyn:—Certainly missing on plates in this position.
Cape:—1898, June 8. A very faint star thereabouts = 11·5 mag., C.P.D. star at 25″·1 = 9·4 mag.
,, June 22. No star in Cor. D.M.'s position, several stars fainter than 10th mag. very near. Star at 25″·1 = 9·4 mag.
Cordoba:—Misprint, for − 39° 45′·6, read − 39° 25′·6.

No. 244. $19^h\ 21^m\ 43^s$ $-24°\ 0'·4$ 9·0

Kapteyn:—Missing in six sweeps.
Cordoba:—Misprint, should be 9·9 mag.

No. 245. $19^h\ 31^m\ 35^s·4$ $-25°\ 8'·4$ 8·9

Kapteyn:—One rejected obs. −0 (10·4) at $19^h\ 31^m\ 37^s·7$ −25° 10′·8. Plates referred to. In the position of our observation there is a very faint star. In Cor. D.M.'s position, nothing.

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Cape :—1897, July 27, invisible.
,, Aug. 8, ,,
,, ,, 16, ,,
,, Sept. 5, ,, Some very faint stars near its position.
,, Oct. 28, ,,
,, Nov. 4, ,, Star near estimated 8·7 mag. is = 8·2 in Cor. D.M.
1900 July 6, *nil.*
Cordoba :—For 8·9 mag. read 9·9 mag. [But even this was not seen here.]

No. 246. $19^h\ 36^m\ 38{\cdot}7^s$ —28° 38′·3 M. 9·0

Kapteyn :—One rejected obs. −0 (10·4).
In Cor. D.M.'s list of suspected variables. Plates referred to. Very faint star −0 (10·4). $19^h\ 36^m\ 40^s{\cdot}0$ —28° 37′·9. The images on *c.* and *m.* show the normal difference in density. Cor. D.M.'s mags. : 8·5, 9, 8·7, 9·5.
Cape :—1897, July 27, 9·0 mag.
,, Aug. 8, 9·0 ,, orange.
,, ,, 20, 9·1 ,,
,, Sept. 5, 9·05 ,,
,, Nov. 4, 9·0 ,, reddish.
,, Dec. 1, (8·9) ,,
1898, June 6, 9·0 ,,
,, ,, 30, 9·05 ,,
,, Nov. 2, 8·9 ,,
1899, June 22, 8·8 ,, orange.
,, Oct. 3, 8·9 ,,
Mean : 9·0 orange.
Not variable. Position quoted by Kapteyn would doubtless be correct.

No. 247. $19^h\ 47^m\ 23^s$ —31° 46′ 9·0

Kapteyn :—Certainly missing.

	mag.		mag.
Cape :—1897, July 27,	9·3	1897, Aug. 16,	9·15
,, Aug. 8,	9·1	,, ,, ,,	9·2

No. 248. $19^h\ 47^m\ 28^s$ —32° 6′ 9·0

Kapteyn :—Certainly missing.
Cape :—1897, July 27, 9·1 mag. with a 10^m comes.
,, Aug. 8, 9·0 ,,
,, ,, 16, 9·0 ,, reddish.
Cordoba :—For 9·0 mag. read 9·9 mag.

No. 249. $19^h\ 53^m\ 25^s$ —32° 22′ 9·0

Kapteyn :—One rejected obs. −0 (10·4).
Plates referred to. Extremely faint and somewhat doubtful star on both *c.* and *m.*
Cape :—1897, July 27, 9·4 mag.
,, Aug. 8, 9·3 ,,
,, ,, 16, 9·4 ,,
,, Oct. 17, 9·3 ,,
Mean : 9·35.
Independent estimates. This is about 9·0 or 9·1 mag. in the Cordoba scale for surrounding stars.

No. 250. $19^h\ 54^m\ 40^s$ —31° 29′ 9·0

Kapteyn :— Extremely faint star on both *c.* and *m.*
Cape :—1897, July 27, 9·2 mag.
,, Aug. 8, 9·0 ,,
,, ,, 16, 9·0 ,,
Mean : 9·1.

No. 251. $19^h\ 55^m\ 50^s$ —31° 59′ 8·8

Kapteyn :—One rejected obs. −0 (10·4.).
Plates referred to. Doubtful traces on both *c.* and *m.*
Cape :—1897, July 27, 9·0 mag. (double 9·4 and 10·2 mag.) in Thome's scale which here rates the stars brighter than they really are.
Cape :—1897, Aug. 8, 8·9 mag., coarse double.
,, ,, 16, 9·1 ,, double.
,, Sept. 5, 9·1 ,, ,,

No. 252. $19^h\ 56^m\ 56^s$ —31° 49′ M. 8·7

Kapteyn :—One rejected obs. −0 (10·4).
Plates referred to. Extremely faint star on both *c.* and *m.*
Cape :—1897, July 27, 9·25 mag.
,, Aug. 10, 9·1 ,,
,, Sept. 5, 9·1 ,, yellow.
Mean : 9·15 ,, ,,

No. 253. $20^h\ 0^m\ 4^s{\cdot}6$ —31° 5′·7 8·3

According to private communication from Dr Thome :—
Cordoba obs. :—1887, July 22, not visible.
1888, ,, 30, 8·3 mag.
Revision :—1897, Aug. 21, not seen.
Cape :—1899, Sept. 1, invisible.
,, Nov. 11, ,,
1900, Aug 20, *nil.*
There is an 8·5 mag. star 5′ S.

No. 254. $20^h\ 9^m\ 0^s$ —29° 25′ 9·0

Kapteyn :—Extremely faint star on four plates.
Cape :—1897, Aug. 19, 9·5 mag.
,, Sept. 5, 9·3 ,,
,, ,, 13, 9·3 ,,
,, Nov. 4, 9·3 ,,
Mean : 9·35.
Cordoba :— Put 10 mag. (A.N. No. 3784).
,, 9·9 ,, (Cor. Res. Vol. 18.)
Cor. D.M.—29° No. 16,920, 10^m at $20^h\ 8^m\ 9^s$—29° 25′·3 invisible There is a 10th mag. 3′ or 4′ N. of position quoted.

No. 255. $20^h\ 9^m\ 10^s$ —27° 8′ 9·0

Kapteyn :—Certainly missing on both *c.* and *m.*
Cape :—1897, Aug. 19, 9·7 mag.
,, Sept. 5, 9·3 ,,
,, ,, 8, 9·75 ,,
,, ,, 13, 9·5 ,,
,, ,, 14, 9·6 ,,
,, Oct. 17, 9·8 ,,
,, ,, 19, 9·6 ,,
,, ,, 21, 9·5 ,,
,, ,, 23, 9·6 ,,
,, Nov. 17, 9·55 ,,
Mean : 9·6.
Cordoba :—For 9·0 mag. read 10 mag.

No. 256. $20^h\ 11^m\ 9^s$ —31° 3′ 9·0

Kapteyn :—Certainly missing on both *c.* and *m.*
Cape :—1897, Aug. 19, 9·5 mag.
,, Sept. 5, 9·5 ,,
,, ,, 13, 9·5 ,,
,, Nov. 4, 9·45 ,,
Mean : 9·5.
Cordoba :—For 9·0 mag. read 10 mag.

No. 257. $20^h\ 14^m\ 2^s$ —29° 36′ 9·0

Kapteyn :—One rejected obs. −0 (10·0).
Plates referred to. Star (−0) contained on both *c.* and *m.*
Cape :—1897, Aug. 19, 9·25 mag.
,, Sept. 5, 9·1 ,, yellow.
,, ,, 13, 9·2 ,,

No. 258. $20^h\ 21^m\ 49^s$ —30° 27′ 9·0

Kapteyn :—One rejected obs. −0 (10·0). Plates referred to. On *c.* doubtful traces, on *m.* there is a bubble in the glass, just in the position of the star.
Cape :—1897, Aug. 19. Seen ; double 9·0 and 9·8 mag. 6″.
Cordoba :—For 9·0 mag. read 9·6 mag.

No. 259. $20^h\ 23^m\ 30^s$ —33° 25′ M. 9·0

Kapteyn :—Extremely faint star on both *c.* and *m.*
Cape :—1897, Aug. 19, 9·3 mag. } =9·4
,, Sept. 8, 9·4 ,,
,, ,, 14, 9·5 ,,
,, Oct. 17, 9·5 ,,
,, Nov. 4, 9·4 ,,

No. 260. $20^h\ 24^m\ 20^s$ —32° 44′ 9·0

Kapteyn :—Doubtful traces on both *c.* and *m.*
Cape :—1897, Aug. 19, 9·1 mag., orange.
,, Sept. 8, 9·2 ,,
,, ,, 14, 9·1 ,, ,,

No. 261. $20^h\ 26^m\ 28^s$ —30° 6′ 9·0

Kapteyn :—On *c.* very evident, mag. = 9·6. On *m.* certainly missing, therefore mag. < 10·0. Probably *variable.*
Cape :—1897, Aug. 19, 9·1 mag.
,, Sept. 8, 9·05 ,,
,, ,, 14, 9·1 ,,
,, Oct. 19, 9·1 ,,
,, Nov. 20, 9·1 ,,
1898, June 6, 9·2 ,,
,, ,, 8, 9·25.
Mean : 9·13.
Two days elapsed between the taking of *m.* and *c.* Probably an Algol variable.
See also Suspected Variables for further observations.
The star $20^h\ 27^m\ 38^s$ − 30° 17′ given as 9·6 mag. in Cor. D.M. is 9·9 mag.

No. 262. $20^h\ 54^m\ 54^s$ —27° 35′ 8·7

Kapteyn :—Certainly missing on both *c.* and *m.* Star in Thome's list of suspected variables. Mags. *invisible*, 9, 9·3, *invisible.* (Not in Chandler III.) Very probably *variable.*
Cape :—1897, Aug. 15, 9·4 mag.
,, Sept. 8, 9·9 ,,
,, ,, 14, 10·0 ,,
,, ,, 23, invisible ; certainly under 10·5 mag.
Is R R Capricorni. See *Astr. Jour.*, No. 392.

No. 263. $20^h\ 59^m\ 52{\cdot}9^s$ —31° 37′·4 8·0

Kapteyn :—Certainly missing on four plates. (In Thome no "colour;" not in list of suspected variables ; not in errata).
Cape :—Invisible 19/8/97, 19/10/97, 21/10/97, 23/10/97, 28/10/97, 12/11/97, 6/7/1900.
The nearest star seen is an 11th mag. double at $20^h\ 59^m\ 54^s$ —31° 36′·5.
Cordoba :—Only observed once and not seen again.

No. 264. $21^h\ 8^m\ 58^s$ —38° 52′ 9·0

Kapteyn :—One rejected obs. −0 (10·4).
Also one obs. (10·4) on rejected plate.
Cape :—1898, June 8, 9·1 mag.
,, ,, 30, 9·1 ,,
,, July 25, 9·1 ,,

No. 265. $21^h\ 17^m\ 38^s$ —35° 0′ 9·0

Kapteyn :—Certainly missing on four plates.
Cape :—1898, July 20, 9·5 mag.
,, Aug. 13, 9·5 ,,

Note. Nos. 253 and 263. Dr. Ristenpart informs us that these Cordoba Observations could not have been of a planet.

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No. 266. $21^h\ 24^m\ 19^s$ $-29°\ 40'$ M. 9·0

Kapteyn :—One rejected obs. −0 (10·0).

mag.		mag.
Cape :—1897, Aug. 20, 9·0	1898, Sept. 14, 8·9	
,, Sept. 8, 8·9	,, ,, 23, 9·0	

No. 267. $21^h\ 26^m\ 42^s$ $-30°\ 27'$ 9·0

Kapteyn :—Doubtful traces on *c.* On *m.* and third plate certainly missing.

Cape :—1897, Aug. 20, 9·1 mag.
,, Sept. 8, 9·3 ,,
,, ,, 14, 9·4 ,,
,, ,, 23, 9·3 ,,
,, Nov. 4, 9·0 ,, reddish.
,, ,, 11, 9·05 ,,
,, ,, 15, 9·2 ,,
,, ,, 16, 9·1 ,,
,, ,, 20, 9·05 ,,
,, ,, 24, 9·0 ,,
,, ,, 26, 9·0 ,,
,, ,, 28, 9·05 ,,
,, Dec. 10, 9·1 ,,
Mean : 9·1 (reddish).

No. 268. $21^h\ 28^m\ 22^s$ $-30°\ 44'$ 8·9

Kapteyn :—Extremely faint star on three plates.

Cape :—1897, Aug. 20, 9·1 mag.
,, Sept. 8, 9·25 ,,
,, ,, 14, 9·4 ,,
,, ,, 23, 9·2 ,,
,, ,, 27, 9·2 ,,
,, Oct. 23, 9·0 ,, ±
,, Nov. 1, 9·3 ,,
,, ,, 13, 9·0 ,,
Mean : 9·2.

No good comparison stars near.

No. 269. $21^h\ 43^m\ 58^s$ $-31°\ 20'$ 8·9

Kapteyn :—Star −0 (10·0) on three plates.

Cape :—1897, Aug. 20, 9·0 mag.
,, Sept. 8, 9·0 ,,
,, ,, 14, 8·9 ,,
,, ,, 23, 8·7 ,, yellow.
,, ,, 27, 8·9 ,, ,,
,, Oct. 23, 8·8 ,,
Mean : 8·9 yellow.

No. 270. $21^h\ 49^m\ 46^s$ $-30°\ 39'$ 9·0

Kapteyn :—Doubtful traces on *c.* and. *m.* On third plate certainly missing.

Cape :—1897, Aug. 20, 9·1 mag.
,, Sept. 8, 9·0 ,, } yellowish, same in hue and mag. as star 37 sec. *f.*
,, ,, 23, 9·0 ,, }

The star 37 sec. *f.* is 9·0 mag. in Cor. D.M. and 10·0 mag. in the C.P.D.

No. 271. $21^h\ 52^m\ 36^s$ $-31°\ 42'$ 9·0

Kapteyn :—Very doubtful traces on three plates:

mag.		mag.
Cape :—1897, Aug. 20, 9·1	1897, Sept. 23, 9·05	
,, Sept. 8, 9·25	,, ,, 27, 9·1	

No. 272. $21^h\ 54^m\ 53^s$ $-32°\ 30'$ 9·0

Kapteyn :—One rejected obs. −0 (10·0).
Plates referred to. Extremely faint star on both *c.* and *m.* On third plate doubtful traces.

mag.		mag.
Cape :—1897, Aug. 25, 9·5	1897, Oct. 6, 9·2	
,, Sept. 8, 9·4	,, ,, 23, 9·4	
,, ,, 23, 9·4	,, Dec. 4, 9·4	
,, ,, 27, 9·5		
Mean : 6·4.		

No. 273. $21^h\ 57^m\ 22^s$ $-33°\ 27'$ M. 8·9

Kapteyn :—Extremely faint star on both *c.* and *m.* On third plate very doutful traces.

Cape :—1897. Aug. 25, 9·25 mag.
,, Sept. 8, 9·3 ,, double.
,, ,, 23, 9·2 ,, double 5″.
,, Nov. 1, 9·2 ,, double equal mags.

No. 274. $21^h\ 57^m\ 37^s$ $-38°\ 33'·7$ 9·0

Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on *m.* and *c.*

Cape :—1898, July 20. No star.
,, Aug. 13. 10·6 mag.
,, ,, 23. 11·0 ,,
,, Sept. 14. There is no bright star here, there is, however, a very faint wide pair, both stars under 11·0 mag.
,, ,, 21. No star = 10·3 mag. or brighter there.
,, ,, 28. No star.
,, Oct. 20. 10·5 mag.
,, Nov. 1. 11·5 ,,
,, ,, 29. Very faint object, query if double star 10·5 mag. and 11, 90°, 5″, in position given.

Cordoba :—Obs. 10m thrice. Misprint : for 9·0 read 10 mag.

The Cape obs. indicate the presence of a very faint pair of stars in this position.

No. 275. $22^h\ 11^m\ 55^s$ $-38°\ 23'$ 9·0

Kapteyn :—Missing in four sweeps on two pairs of plates. Certainly missing on *m.* and *c.*

mag.		mag.
Cape :—1898, July 20, 10·0	1898, Sept. 28,[10·7]	
,, Aug. 13, 10·7	,, Oct. 20, 9·9	
,, ,, 23, 11·0	,, Nov. 1, 10·3	
,, Sept. 14, 10·0	,, ,, 29, 10·0	
,, ,, 21, 10·7		

Cordoba :—Misprint, for 9·0 read 10·0 mag. (three observations = 10).

No. 276. $22^h\ 13^m\ 59^s$ $-32°\ 4'$ 9·0

Kapteyn :—Extremely faint star on both *c.* and *m.* On three other plates certainly missing.

mag.		mag.
Cape :—1897, Aug. 25, 9·6	1897, Nov. 1, 9·5	
,, Sept. 8, 9·65	1898, June 6, 9·7	
,, ,, 23, 9·6		
Mean : 9·6.		

No. 277. $22^h\ 23^m\ 6^s$ $-26°\ 2'$ 9·0

Kapteyn :—One rejected obs. −0 (10·3).

Cape :—1897, Aug. 20, 9·0 mag.
,, Sept. 8, 9·2 ,,
,, ,, 24, 9·0 ,,

No. 278. $22^h\ 24^m\ 14^s$ $-25°\ 52'$ 9·0

Kapteyn :—Extremely faint star on both *c.* and *m.*

Cape :—1897, Aug. 25, 9·2 mag. (reddish).
,, Sept. 8, 9·1 ,,
,, ,, 21, 9·0 ,,

No. 279. $22^h\ 25^m\ 8^s$ $-22°\ 53'$ 9·0

In Cor. D.M. List of Suspected Variables, viz. :—
1886, Aug. 4, 8·7 mag.
1890, Dec. 7, Inv.
1891, Aug. 6, 9 ,,
1892, Nov. 22, 23, Inv.

Not in B.D. Also not found on photos taken by the Harvard obs. on 16 nights.

Cape :—1898, Aug. 27. No star there.
,, Sept. 12. ,, ,, ,,

No. 280. $22^h\ 26^m\ 35^s$ $-31°\ 20'$ M. 9·0

Kapteyn :—One rejected obs. −0 (10·3).
Plates referred to. Faint star on both *c.* and *m.*; on three other plates certainly missing.

mag.		mag.
Cape :—1897, Aug. 25, 9·1	1897, Sept. 21, 9·0	
,, Sept. 8, 9·3	,, ,, 25, 9·2	
Mean : 9·2.		

No. 281. $22^h\ 28^m\ 38^s$ $-32°\ 17'$ 9·0

Kapteyn :—One rejected obs. −0 (10·3).
Plates referred to. Very faint star on both *c.* and *m.* On three other plates certainly missing.

Cape :—1897, Jan. 2, 9·0 mag. (red).

No. 282. $22^h\ 33^m\ 29^s$ $-32°\ 57'$ 8·9

Kapteyn :—Two obs. −0 (10·3).
Was rejected on account of a doubt about its stellar nature. Plates referred to. On both *c.* and *m.*, very faint star. On three other plates certainly missing.

Cape :—1897, Jan. 2, 8·8 mag. (orange). (Thome's scale).
1900, Aug. 20, 9·4 mag. (red) which is about equal to Thome's 8·8 mag. in this region.

No. 283. $22^h\ 34^m\ 18^s$ $-32°\ 27'$ 9·0

Kapteyn :—On *c.* of region $22^h\ 24^m$ doubtful traces; on four other plates of this region certainly missing. Also on *c.* and *m.* of region $22^h\ 48^m$ certainly missing.

Cape :—1897, Jan. 2, 9·0 mag. (no colour).
1902, May 27, 9·3 ,,
(See footnote).

No. 284. $22^h\ 35^m\ 34^s$ $-31°\ 16'$ 9·0

Kapteyn :—On four plates (of regions $22^h\ 24^m$ and $22^h\ 48^m$) very faint star, on three other plates certainly missing.

Cape :—1897, Aug. 25, 9·0 mag. double *comes* 11th mag. *n.f.*
,, Sept. 8, 9·0 ,,
,, ,, 21, 9·0 ,,

No. 285. $22^h\ 36^m\ 14^s$ $-32°\ 36'$ 8·6

Kapteyn :—One rejected obs. −0 (10·4).
Plates referred to. On three plates very faint star.

Cape :—1897, Jan. 2, 9·0 mag.
,, Aug. 16, 8·9 ,, (orange).
,, Sept. 8, 9·0 ,, orange.
,, ,, 21, 8·9 ,,
Mean : 8·95 orange.

No. 286. $22^h\ 40^m\ 15^s$ $-31°\ 54'$ 9·0

Kapteyn :—On three plates extremely faint star.

Cape :—1897, Aug. 27, 8·9 mag. on Thome's scale.
,, Sept. 21, 9·0 ,, ,, ,,
,, ,, 25, 9·0 ,, ,, ,,
,, Oct. 6, 8·8 ,,
,, ,, 23, 9·0 ,,
,, Nov. 1, 9·0 ,,
Mean : 8·95.

Note. Nos. 283–300. The check plate of the region $-31\frac{1}{2}°$, $22^h\ 48^m$ is considerably fainter than measuring plate. (*Vide Introduction*, Vol. I. p. (117)).

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No. 287. $22^h\ 41^m\ 29^s$ $-31°\ 3'$ M. 8·7

Kapetyn :—One rejected obs. o (10·4).
Plates referred to. On three plates very faint star.
Cape :—1897, Aug. 27, 9·0 mag. yellow.
,, Sept. 21, 8·8 ,,
,, ,, 25, 8·8 ,,
1900, Aug. 24, 9·5 } Independent scale of
,, ,, 28, 9·5 } magnitudes.

No. 288. $22^h\ 42^m\ 0^s$ $-32°\ 44'$ 9·0

Kapteyn :—One rejected obs. +o (10·2).
Was rejected on account of doubt about stellar nature. Plates referred to. Extremely faint star on three plates.
Cape :—1897, Jan. 2. Seen, 9·0 mag. (no colour).
1902, May 27. ,, ,, ,, ,, ,,

No. 289. $22^h\ 42^m\ 22^s$ $-32°\ 35'$ 8·9

Kapteyn :—On *m.* and on plate 1607 doubtful traces. On *c.* certainly missing.
Cape :—1897, Jan. 2. Seen, 8·8 mag. (no colour).
1902, May 27. ,, 9·0 ,, ,, ,,

No. 290. $22^h\ 42^m\ 50^s$ $-32°\ 23'$ 9·0

Kapteyn :—Very faint star on three plates.
Cape :—1897, Jan. 2. Seen, 9·0 mag. (no colour).
1902, May 27. ,, ,, ,, ,, ,,

No. 291. $22^h\ 43^m\ 8^s$ $-31°\ 24'$ 9·0

Kapteyn :—One rejected obs. o (10·4).
Plates referred to. Star (10·4) on three plates.
Cape :—1897, Aug. 27, 9·0 mag.
,, Sept. 23, 9·2 ,,
,, ,, 25, 9·1 ,,
,, Oct. 6, 9·1 ,,
Mean : 9·1.

No. 292. $22^h\ 44^m\ 19^s$ $-32°\ 12'$ 9·0

Kapteyn :—Very faint star on three plates.
Cape :—1897, Jan. 2. Seen, 9·0 mag. (no colour).

No. 293. $22^h\ 44^m\ 54^s$ $-31°\ 47'$ 9·0

Kapteyn :—One rejected obs. o (10·4).
Very faint star on three plates.
Cape :—1897, Aug. 27, 8·9 mag.
,, Sept. 23, 9·1 ,,
,, ,, 25, 9·2 ,,
,, Oct. 6, 9·0 ,,

No. 294. $22^h\ 47^m\ 52^s$ $-32°\ 17'$ 9·0

Kapteyn :—Very faint star on three plates.
Cape :—1897, Jan. 1. Seen, 9·0 mag. (red).

No. 295. $22^h\ 53^m\ 46^s$ $-32°\ 33'$ 8·9

Kapteyn :—Extremely faint star on three plates.
Cape :—1897, Jan. 2. Seen, 8·9 mag. (orange).

No. 296. $22^h\ 54^m\ 5^s$ $-32°\ 47'$ M. 9·0

Kapteyn :—Extremely faint star on three plates.
Cape :—1897, Jan. 2. Seen, 9·1 mag. (no colour).

No. 297. $22^h\ 54^m\ 50^s$ $-29°\ 59'$ 8·7

Kapteyn :—One rejected obs. −o (10·7).
Plates referred to. On both *c.* and *m.* very faint star.
Cape :—1897, Aug. 27, 9·0 mag., new scale.
,, Sept. 23, 9·0 ,, orange.
,, Oct. 23, 9·0 ,,
,, Nov. 1, 9·0 ,,
,, Dec. 23, ,, red.
Mean : 9·0 orange-red.

No. 298. $22^h\ 54^m\ 54^s$ $-32°\ 37'$ 9·0

Kapteyn :—Certainly missing on three plates.
Cape :—1897, Jan. 2. Seen, 9·1 mag. (no colour).

No. 299. $22^h\ 56^m\ 30^s$ $-32°\ 32'$ 9·0

Kapteyn :—One rejected obs. o (10·4).
Plates referred to. Very faint star on three plates.
Cape :—1897, Jan. 2. Seen, 9·0 mag. (no colour).

No. 300. $22^h\ 56^m\ 38^s$ $-31°\ 57'$ 9·0

Kapteyn :—On *m.* and plate 1607 extremely faint star. On *c.* certainly missing.
Cape :—1897, Aug. 27, 9·4 mag.
,, Sept. 23, 9·4 ,, red =8.
,, Oct. 5, 9·6 ,,
,, ,, 23, 9·5 ,,

No. 301. $22^h\ 58^m\ 31^s$ $-37°\ 14'$ 6·7

Kapteyn :—Certainly missing on *m.* and *c.*
Cape :—1898, July 23, 9·8 mag. Cor. D.M. 15,072, not seen.
,, Aug. 6, 9·7 mag. no 10^m N. *pr.*
,, ,, 23, 9·8 ,, no 10^m N. *pr.* but a star 10·5 at about $22^h\ 58^m\ 26^s - 37°\ 3'·4$.
,, Sept. 14, 9·7 mag. no 10^m N. *pr.* as in Cor. D.M. and 10^m *f.* is too far N.
,, Nov. 29, 9·8 mag. same note.
Cordoba :—Misprint, should be 9·7 mag. As to Cor. D.M. −37°, 15,072, two obs. 10^m, twice not seen.

No. 302. $22^h\ 59^m\ 12^s$ $-31°\ 22'$ 9·0

Kapteyn :—One rejected obs. −o (11·4).
Plates referred to. On *c.* and *m.* extremely faint star. On plate No. 1614 certainly missing.
Cape :—1897, Aug. 27, 9·0 mag.
,, Sept. 23, 9·1 ,,
,, Oct. 5, 9·15 ,,
,, Dec. 2, 9·2 ,,
,, ,, 4, 9·15 ,, orange.

No. 303. $23^h\ 3^m\ 15^s$ $-25°\ 47'$ M. 9·0

Kapteyn :—Certainly missing on three plates.
Cape :—1897, Aug. 29, 9·0 mag.
,, Sept. 23, 9·0 ,, (really 9·5 mag.).
,, Oct. 5, 9·05 ,,

No. 304. $23^h\ 3^m\ 28^s$ $-33°\ 30'$ 8·7

Kapteyn :—One rejected obs. −o (11·4).
Extremely faint star on four plates. On plate No. 1873 certainly missing.
Cape :—1897, Aug. 29, 9·0 mag.
,, Sept. 23, 9·0 ,,
,, Oct. 5, 9·0 ,,

No. 305. $23^h\ 3^m\ 29^s$ $-26°\ 9'$ 9·0

Kapteyn :—One rejected obs. −o (9·6).
Cape :—1897, Aug. 29, 9·4 mag.
,, Sept. 23, 9·25 ,, yellow.
,, Oct. 5, 9·3 ,,
,, Dec. 2, 9·1 ,,
,, ,, 4, 9·25 ,,

No. 306. $23^h\ 10^m\ 37^s$ $-25°\ 6'$ 9·0

Kapteyn :—One rejected obs. −o (9·6).
Cape :—1897, Aug. 29, 9·0 mag.
,, Sept. 23, 8·9 ,, yellow.
,, Oct. 5, 9·2 ,,
,, Nov. 11, 8·95 ,,
,, ,, 15, 8·9 ,,

No. 307. $23^h\ 17^m\ 54^s$ $-26°\ 4'$ 8·9

Kapteyn :—Very doubtful traces on three plates.
Cape :—1897, Aug. 29, 9·3 mag.
,, Sept. 25, 9·0 ,, yellow, 6.
,, Oct. 5, 9·0 ,,
,, Nov. 11, 9·3 ,,
,, ,, 24, 9·2 ,,
Mean : 9·2 colour 6.
Cor. D.M.—26°, No. 16,625, mag. 10 ; was noted as invisible on 29th Aug. 1897.

No. 308. $23^h\ 47^m\ 19^s$ $-28°\ 15'$ 9·0

Kapteyn :—On *m.* certainly missing. On two other plates very doubtful traces.
Cape :—1897, Aug. 29, 9·1 mag.
,, Sept. 27, 9·1 ,, red.
,, Nov. 11, 9·3 ,,
,, ,, 24, 9·2 ,,

No. 309. $23^h\ 54^m\ 16^s$ $-31°\ 56'$ 9·0

Kapteyn :—Very doubtful traces on *m.* and *c.* On three other plates certainly missing.

	mag.		mag.
Cape :—1897, Aug. 29,	9·4	1897, Dec. 2,	9·2
,, Sept. 25,	9·5	,, ,, 10,	9·1
,, Nov. 11,	9·1	,, ,, 18.	9·25
,, ,, 25,	9·25	1898, Jan. 1,	9·25

Mean : 9·3.

Note. Nos. 283–300. The check plate of the region $-31\frac{1}{2}°$, $22^h\ 48^m$ is considerably fainter than measuring plate. (*Vide Introduction*, Vol. I. p. (117)).

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LIST III.

C.P.D. VOL. I. PAGES (86-88.)

STARS 9·0 OR BRIGHTER PHOTOGRAPHICALLY ON C.P.D. PLATES, MISSING IN SCHÖNFELD'S B.D.

RESULTS OF A VISUAL EXAMINATION OF THE OBJECTS.

No. 1. $6^h\ 40^m\ 49^s{\cdot}4$ $-20°\ 40'{\cdot}9$ M. 8·9
$6\ 40\ 52{\cdot}4$ $-20\ 40{\cdot}3$ 8·2

Kapteyn :—B.D. has only one star here (8·8 mag.).
Cape :—1900, Jan. 23. These stars are in the coarse cluster G.C. No. 1454. The *pr.* star is somewhat faint, say 9·5 mag. Hereabouts many of the C.P.D. mags. are too bright. Many ruddy stars and some neat pairs here.
Both stars occur in Gould's *Cordoba Photographs*, viz.
$9{\cdot}0^m\ 6^h\ 40^m\ 49^s{\cdot}4$ $-20°\ 40'{\cdot}9$
9·0 6 40 53·0 −20 40·4
But Gould gives a star 9·0 mag. $6^h\ 37^m\ 41^s{\cdot}4$ $-20°\ 33'{\cdot}8$ which is not in the C.P.D. and it was not visible in the 7-in., 1900, Feb. 26, Apr. 3, and 1902, May 6.

Nos. 2 and 3. $6^h\ 49^m\ 37^s{\cdot}7$ $-20°\ 17'{\cdot}0$ 8·9
$6\ 49\ 38{\cdot}2$ $-20\ 15{\cdot}7$ 8.8
$6\ 49\ 41{\cdot}2$ $-20\ 15{\cdot}2$ 9.0

Kapteyn :—B.D. has only one star (9·1 mag.) here. The three stars are near to the bright one (6·8 mag. in B.D.) at $6^h\ 49^m\ 39^s{\cdot}2$ $-20°\ 14'{\cdot}8$.

Cape :—1900, Jan. 22. All three stars seen, mags. say 9·1, 9·0 and 8·8, redness 6. A neat group.

No. 4. See List of Suspected Variable Stars.

No. 5. $7^h\ 33^m\ 53^s$ $-22°\ 31'{\cdot}3$ M. 8·5

Kapteyn :—Cor. D.M. = 9·3 mag.
Cape :—1896, Nov. 19, 9·3 mag.
Two closely neighbouring stars also shew Cor. D.M.—C.P.D. = 0·7 or 0·8 mag.
Plate 4523, 1897, Feb. 3 = 9·1 mag. on visual scale. Or using C.P.D. mags. for comparison stars = 8·7.
See also Suspected Variable Stars No. 35 in this volume, page 9B.

Nos. 6, 7, 8. See List of Suspected. Variable Stars, Part II.

No. 9. $8^h\ 34^m\ 20^s$ $-22°\ 51'{\cdot}4$ 9·0

Kapteyn :—Also missing in Cor. D.M.

	mag.		mag.
Cape :—1896, Dec.	18, 9·3	1897, Feb.	2, 9·3
,, ,,	21, 9·5	,, Apr.	3, 9·2
,, ,,	28, 9·2		

Mean : 9 3.
Or on C.P.D. scale for this region = 8·9.
See also No. 46, page 9B.

No. 10. See Kapteyn's remarks.

No. 11. See Kapteyn's remarks.

No. 12. $18^h\ 24^m\ 27^s{\cdot}0$ $-19°\ 12'{\cdot}8$ M. 8·8

Kapteyn :—Near the variable star $18^h\ 24^m\ 32^s{\cdot}0$ $-19°\ 12'{\cdot}6$ (U Sagittar.)

	mag.		mag.
Cape :—1899, Sept.	20, 9·2	1899, Oct.	10, 9·1±
,, ,,	25, 9·1	,, Nov.	7, 9·1
,, ,,	27, 9·1	1900, May	21, 9·1
,, Oct.	3, 9·05	,, July	6, 9·0

Mean : 9·1.

LIST III. *bis.*

C.P.D. VOL. III. PAGES (81-83.)

STARS, 9·2 MAGNITUDE OR BRIGHTER, CONTAINED IN THE C.P.D. AND MISSING IN THOME'S *CORDOBA DURCHMUSTERUNG* (PARTS I. AND II.).

No mention is made in this list of the numerous cases where two or more stars very close together occur in the C.P.D., but are represented by a single star in the Cor. D.M. When two stars of nearly the same magnitude, and over 1′ of arc apart, occur in the C.P.D. and one of them is missing in the Cor. D.M. the omission is included in the following list. See page 58A for Dr. Thome's notes on this list.

RESULTS OF A VISUAL REVISION.

No. 0. $3^h\ 44^m\ 27^s{\cdot}9$ $-41°\ 1'{\cdot}6$ M. 8·8

Cape :—Not variable in 3 *Carte du Ciel* plates.

No. 1. $4^h\ 13^m\ 12^s{\cdot}6$ $-33°\ 53'{\cdot}9$ 8·9

Kapteyn :—Probably 10 secs. error in Thome and our star identical with Thome's (9·3) $13^m\ 1^s{\cdot}6$ $-33°\ 54'{\cdot}5$.
Cape :—1897, Feb. 15. Star seen = 9·25 mag. ; No star in Cor. D.M.'s position.

No. 2. $4^h\ 42^m\ 52^s{\cdot}6$ $-29°\ 0'{\cdot}2$ M. 9·2

Kapteyn :—Perhaps 1° error in Thome, and our star identical with Thome's (9·4) $42^m\ 51^s{\cdot}8$ $-28°\ 0'{\cdot}0$.
Cape :—1897, Feb. 15. Star seen = 9·4 mag. ; Cor. D.M. −28°, 1751 not found.

No. 3. $4^h\ 45^m\ 39^s{\cdot}2$ $-28°\ 37'{\cdot}2$ 9·0

Kapteyn :—Probably 10′ error in Thome, and our star identical with Thome's (9·3) $45^m\ 40^s{\cdot}4$. $-28°\ 46'{\cdot}7$. Plates referred to. On three plates mag. 9·0 in perfect agreement.

Cape :—No star in Cor. D.M. position.
Mag. of C.P.D. star :—

	mag.		mag.
1897, Feb.	15, 9·6	1897, Apr.	13, 9·6
,, ,,	21, 9·6	,, ,,	26, 9·5
,, Mar.	31, 9·6		

No. 4. $6^h\ 16^m\ 6^s$ $-34°\ 32'{\cdot}9$ M. 8·9

Kapteyn :—Looked up on plates. Images normal.
Cape :—1898, March 17. Mag. 8·9 (no 9·4 mag. as in Cor. D.M. at $6^h\ 16^m\ 7^s$ $-34°\ 44'{\cdot}7$. No. 2809 ; and Cor. D.M's dec. of No. 2805 is 1′ in error).

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No. 5. $6^h\ 49^m\ 33^s{\cdot}2$ $-24°\ 0'{\cdot}6$ M. 8·7

Kapteyn :—The star is contained on six plates, which reduced on a uniform system give the following mags.—

Plate 2141, 9·4 mag. 1889, Feb. 27.
,, 2146, 9·4 ,, ,, ,, 28.
,, 2157, 8·6 ,, ,, Mar. 5.
,, 2171, 9·4 ,, ,, ,, 11.
,, 2206, 8·6 ,, ,, ,, 26.
,, 2228, 9·9 ,, ,, Apr. 3.

On four plates, however, the star is very near the border of the plates, consequently the mag. extremely uncertain, still however, *variability seems very probable.*

Cape :—1897, Apr. 9, 8·8 mag. white.
,, ,, 13, 8·7 ,,
,, ,, 20, 9·0 ,, yellow.
,, ,, 23, 9·3 ,,
,, May 4, 8·8 ,,
,, ,, 13, 9·0 ,,
,, ,, 22, 8·7 ,,
,, ,, 29, 9·3 ,,
,, June 7, 8·95 ,,
,, ,, 10, 9·0 ,, white.
,, Nov. 24, 9·0 ,,
,, Dec. 6, 9·0 ,,
,, ,, 10, 9·25 ,, good obs.
,, ,, 17, 9·3 ,,
,, ,, 23, 9·3 ,,
,, ,, 26, 9·1 ,,
,, ,, 28, 9·3 ,,
,, ,, 30, 9·25 ,,
1898, Jan. 2, 9·3 ,,
,, ,, 5, 9·25 ,,
,, ,, 9, 9·1 ,,
,, ,, 14, 9·0 ,,
,, ,, 19, 9·1 ,,
,, Feb. 9, 9·2 ,,
,, Mar. 2, 8·95 ,,
,, ,, 12, 9·2 ,,
,, ,, 18, 9·2 ,,
,, Apr. 12, 9·0 ,,
,, ,, 23, 9·15 ,,
,, May 7, 9·2 ,,
,, ,, 15, 9·3 ,,
,, ,, 28, 9·0 ,,
,, Dec. 4, 9·4 ,,
1899, May 2, 8·8 ,, yellow.
1900, Jan. 16, 9·2 ,,

The range is 8·7 to 9·4 mag. Almost certainly variable in a short period. Still this would not explain its non-appearance in the Cor. D.M.

No. 6. $7^h\ 4^m\ 46^s{\cdot}4$ $-32°\ 43'{\cdot}6$ 8·9

Kapteyn :—Plates referred to.
The star is contained on three plates.

	mag.		mag.
Cape :—1897, Feb.	13, 9·4	1897, May	17, 9·5
,, Apr.	9, 9·7	,, ,,	22, 9·4
,, ,,	10, 9·4	,, ,,	29, 9·1
,, ,,	20, 9·5	,, ,,	31, 9·25
,, ,,	23, 9·5	,, June	1, 9·3
,, ,,	26, 9·55	,, ,,	7, 9·2
,, May	4, 9·5	,, ,,	14, 9·0
,, ,,	13, 9·0	,, Nov.	24, 9·4

Cordoba :—Once as 10 mag., on two other occasions too faint.

See *Astr. Nach.*, No. 3441.

No. 7. $7^h\ 9^m\ 14^s{\cdot}2$ $-31°\ 12'{\cdot}0$ 8·8

In Kapteyn's list, dec. $= 14'{\cdot}2$.

Kapteyn :—Plates referred to.
The star is contained on three plates.

Cape :—1897, May 5, 8·8 mag. at 12″·0.
1898, Aug. 27, 8·8 ,, yellowish.
1902, May 26, 9·0 ,, 12″·0.

No. 8. $7^h\ 14^m\ 5^s{\cdot}4$ $-24°\ 39'{\cdot}8$ M. 9·0

Kapteyn :—Plates referred to.
The star has, on both plates, mag. 9·0.
Photo plate No. 4627, 1897, Dec. 9, 9·5 mag.

	mag.		mag.
Cape :—1897, Apr.	9, 9·7	1897, May	13, 9·7
,, ,,	20, 9·6	,, June	1, 9·7
,, ,,	23, 9·6	,, Nov.	24, 9·5
,, ,,	26, 9·7	,, Dec.	4, 9·5
,, May	4, 9·5	1898, Aug.	27, 9·3

A 9·8 mag. red star is about 2′ S. *f.*

No. 9. $7^h\ 19^m\ 40^s{\cdot}6$ $-28°\ 59'{\cdot}0$ 9·2

Kapteyn :—On plates $31\frac{1}{2}°$, $7^h\ 12^m$ (reduced to system of plates $26\frac{1}{2}°$, $7^h\ 30^m$) = 9·4 mag.

	mag.		mag.
Cape :—1897, Apr.	9, 9·7	1897, May	31, 9·4
,, ,,	20, 9·4	,, June	7, 9·3
,, ,,	23, 9·6	,, ,,	14, 9·3
,, ,,	26, 9·9	,, Dec.	4, 9·3
,, ,,	27, 9·6	,, ,,	28, 9·2
,, May	4, 9·5	1898, Jan.	5, 9·3
,, ,,	13, 9·2	,, ,,	14, 9·3
,, ,,	17, 9·4	,, ,,	21, 9·4
,, ,,	20, 9·4	,, Feb.	14, 9·55
,, ,,	22, 9·5	,, Mar.	2, 9·3
,, ,,	29, 9·4	,, ,,	12, 9·4

Independent examination on 1898, Aug. 27, 9·0 mag. in C.P.D. scale of surrounding stars, but really about 9·4 mag.

No. 10. $7^h\ 29^m\ 52^s{\cdot}8$ $-33°\ 19'{\cdot}8$ 9·0

Kapteyn :—Probably error of 10^s in Thome and our star identical with Thome's (9·5 mag.) $29^m\ 44^s{\cdot}7$, $-33°\ 19'{\cdot}8$. Plates referred to. Both on *c.* and *m.* mag. = 9·0. The star is also contained on two other poorer plates.

Cape :—1897, April 23. Seen 9·5 mag. in above position ; no star in Cor. D.M.'s place.

No. 11. $7^h\ 41^m\ 34^s{\cdot}1$ $-26°\ 31'{\cdot}9$ 9·2
No. 12. 41 35·6 29·5 9·5

Kapteyn :—Thome has only the star (9·6 mag.) $41^m\ 36^s{\cdot}5$ $-26°\ 29'{\cdot}5$ which seems to be the *n.f.* one.

Cape :—1897, April 23. Both stars seen 9·6 and 9·7 mags.

No. 13. $7^h\ 46^m\ 42^s$ $-41°\ 50'{\cdot}8$ 9·2

Kapteyn :—Looked up on plates.
Images normal.

Cape :—1898, March 21. Star 9·7 mag., is a coarse double, *comes* 10·5 mag. 10″ N. *pr.* [9·7 mag. is on Cor. D.M.'s scale for surrounding stars, really = 9·3 mag.] In a rich field.

No. 14. $7^h\ 52^m\ 31^s{\cdot}0$ $-33°\ 40'{\cdot}6$ 9·2

Kapteyn :—Error in Thome, and our star identical with Thome's (10 mag.) $52^m\ 39^s{\cdot}0$ $-33°\ 40'{\cdot}7$? Plates referred to. The star somewhat fainter than given in C.P.D. The error is owing to an accidental speck coincident with the star on *m.* According to *c.* mag. = 9·6.

Cape :—1897, Apr. 23, 9·7 mag.
,, ,, 26, 9·6 ,,
,, May 4, 9·6 ,,

Same mag. as the star 4 secs. *f.* There are 3 stars in a line, the first 2 are in the C.P.D., the last 2 in the Cor. D.M. Hence the middle star is in both catalogues.

No. 15. $7^h\ 53^m\ 40^s$ $-41°\ 24'{\cdot}7$ M. 9·2

Kapteyn :—Looked up on plates.
Images normal.

Cape :—1898, March 22. Mag. 9·6, or on C.P.D. scale = 9·3 mag.

No. 16. $8^h\ 39^m\ 31^s{\cdot}0$ $-38°\ 15'{\cdot}3$ 9·2
No. 17. 39 37·6 15·9 9·7

Kapteyn :—In Thome only the star (10 mag.) $39^m\ 36^s{\cdot}0$, $-38°\ 16'{\cdot}1$.

Cape :—1898, March 22. Two stars as in C.P.D. Mags. 9·7 and 9·9.
,, May 15. Two stars as in C.P.D. Mags. 9·4 and 9·7.
,, May 27. Two stars as in C.P.D. Mags. 9·5 and 9·8.

No. 18. $9^h\ 39^m\ 16^s{\cdot}3$ $-23°\ 26'{\cdot}7$ 8·7

Also missing in Orm. Stone's D.M.

Kapteyn :—Star contained on three plates, all giving 8·75 mag. Variable.

Cape :—Is variable—see Variable Stars in Part II.

No. 19. $10^h\ 35^m\ 42^s$ $-41°\ 44'{\cdot}8$ 9·0

Kapteyn :—Looked up on plates. Images normal.

Cape :—1898, Mar. 18. An 8·75 mag. in position given.
,, May 26. 8·7 mag. Many stars brighter than 9·9 mag. not in Cor. D.M. in this region.

In consequence of Dr Thome's concluding remark on page 58A this star was further looked up and found on the following *Carte du Ciel* plates.
No. 1162. 1893, Feb. 9, 8·3 mag.
,, 5217. 1899, ,, 13, 8·3 ,,
,, 6188. 1901, Mar. 9, 8·3 ,,

No. 20. $11^h\ 40^m\ 5^s$ $-35'\ 14'{\cdot}8$ 8·9

Also in Z.C. = 9·5 mag.

Cape :—1898, Mar. 18. Seen, 9·0 mag.
,, Apr. 3, ,, 9·0 ,,

No. 21. $12^h\ 36^m\ 32^s{\cdot}0$ $-33°\ 0'{\cdot}0$ 9·1

Also in Z.C. = 9th mag.

Cape :—1897, Mar. 15. Seen, 9·0 mag., but the star Cor. D.M. $-33°$, 8590 is not seen. Latter star again looked for and not seen, 1902, May 26.

No. 22. $13^h\ 53^m\ 35^s$ $-36°\ 40'{\cdot}4$ 9·0

Kapteyn :—Looked up on plates. Images normal on three plates.

Cape :—1898, May 7. Seen, 9·3 mag.

No. 23. $13^h\ 55^m\ 50^s$ $-40°\ 15'{\cdot}3$ 8·8

Kapteyn :—Looked up on plates. Images normal.

Cape :—1898, May 7. Seen, 9·0 mag.
,, July 25, ,, 9·0 ,,

Cor. D.M. $-40°$ 8368 not seen. There is a 9·2 mag. star at $13^h\ 55^m\ 35^s$ $-40°\ 13'$ and a 10·2 mag. star at $13^h\ 55^m\ 43^s$ $-40°\ 13'$.

No. 24. $14^h\ 12^m\ 14^s$ $-36°\ 48'{\cdot}6$ 9·1

Kapteyn :—Looked up on four plates. Images normal.

Cape :—1898, May 7. Seen 9·0 mag. There is a star 9·7 mag. 5 secs. *pr.*, same dec., which is equal to a star 9·3 mag. in Cor. D.M. near the position. but dec. in Cor. D.M. is 1′ too great.

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			M.
No. 25.	$14^h\,28^m\,53^s$	$-24°\,41'{\cdot}3$	9·1

Kapteyn:—Looked up on two plates. On both mag. = 9·0.
Cape:—1899, Sept. 1. = 9·2 mag.
The Cor. D.M. gives a star 10th mag. about 2′ S. *pr.* this star, but in the sky there is only a 10·5 mag. star about 2′ S. of the Cordoba position. It is perhaps possible that this 10·5 mag. star and the C.P.D. star were both observed at Cordoba and the mean taken.

No. 26.	$15^h\,18^m\,7^s$	$-37°\,42'{\cdot}8$	8·7

Kapteyn:—Looked up on plates. Inages normal.

mag.		mag.
Cape:—1897, Apr. 26, 9·0	1897, May 21, 8·9	
,, May 13, 8·8	,, ,, 31, 8·9	

Mean: 8·9.

No. 27.	$15^h\,46^m\,30^s{\cdot}8$	$-24°\,52'{\cdot}1$	9·1
No. 28.	46 35·8	−24 52·1	9·2

Kapteyn:—Thome has only the star 9·5 mag. $46^h\,30^s{\cdot}8$ −24° 51′·7.
Case:—1897, May 13. Both stars seen viz.
9·5 mag. 15 $46^m\,30^s{\cdot}8$ −24° 51′·7.
9·8 ,, 35·8 52·1.
mags. in Cor. D.M.'s scale of surrounding stars.

No. 29.	$17^h\,32^m\,28^s{\cdot}6$	$-32°\,9'{\cdot}9$	9·7
No. 30.	32 31 6	7·0	8·7

Kapteyn:—In cluster.
Thome has only the star (9·8 mag.) $32^m\,29^s{\cdot}3$, −32° 8′·9, which seems to be the preceding one. Second star also in (G.).
Cape:—1897, Aug. 31:—
$17^h\,32^m\,29^s$ −32° 10′ = 9·9 mag.
17 32 32 −32 7 = 9·4 ,,
No star in Cor. D.M. position.
The C.P.D. mags. 9·7 and 8·7 I judge to be correct. Both G. and Cor. D.M. make all the magnitudes in this cluster too faint if under 8·5 mag., but their standard was used.

	h m s	° ′	
No. 31.	17 29 17·6	−37 41·2	9·2
32.	34 49·4	35 12·8	9·2
33.	34 50·4	35 7·4	9·2
34.	38 29·4	35 34·2	9·2
35.	39 23·5	35 9·2	9·2
36.	40 15·2	36 3·0	9·2
37.	41 10·8	36 28·6	9·2
38.	42 32·5	35 26·6	9·2
39.	43 25·5	35 29·3	8·8
40.	43 30·8	34 48·0	8·8
41.	44 19·3	36 15·2	9·2
42.	44 24·9	37 46·7	9·2
43.	44 47·8	34 57·2	9·2
No. 44.	45 11·2	34 54·4	9·2
45.	17 45 17·2	−34 47·2	9·2
46.	45 24·7	34 43·8	8·6
47.	45 24·7	34 47·0	9·1
48.	45 40·2	35 25·5	9·2
49.	45 43·7	34 40·3	9·2
50.	45 43·7	34 42·2	9·2
51.	45 49·7	34 45·4	9·2
52.	45 53·2	34 49·0	8·8
53.	46 17·7	34 32·0	9·2
54.	46 22·2	34 36·8	9·1
55.	47 3·7	34 8·2	9·2
56.	47 7·7	34 6·2	9·2
57.	47 23·8	36 0·1	9·2
58.	47 40·7	35 35·2	9·2
59.	48 10·5	36 3·0	9·2
60.	48 35·7	35 14·7	9·2
61.	49 0·9	37 42·0	9·2
62.	51 39·5	36 53·9	9·2
63.	51 39·7	35 16·4	9·2
64.	51 45·7	37 3·5	9·2
65.	51 55·2	37 12·6	9·2
66.	51 58·7	37 41·3	8·6
67.	52 0·7	37 14·2	9·2

Nos. 31 to 67 are in the CLUSTER 7 MESSIER IN SCORPIO.

Kapteyn:—All these stars are missing in Thome; a few on account of their being so near to other pretty bright stars.
Cape:—These stars were not specially examined here, but the following notes may be added.
Nos. 40, 46 and 50 are in the Cluster Catalogue of the C.G.A., viz.:—
No. 46 mag. 9¾
86 ,, 9¼
96 ,, 9·0
This cluster was also photographed at Cordoba; see Gould's *Cordoba Photographs*. A comparison gives:—

Our No.	Cord. Photo. No.	Cord. P. mag.
45	74	10
46	77	9¼
49	88	10
50	89	9
51	93	10
52	96	9¼
53	106	10
54	108	9¾

Nos. 40 and 46 are also in the Cordoba Observations 1884, mags. 9½ and 9·0 respectively.
No. 66 is a double star and was observed here on several occasions.
1897, June 1, 8·7 mag., a neat double 9·1 and 10 mag., 3″, 150°.
,, ,, 21, 8·5 ,, a neat double 8·7 and 9·8 mag., 5″, 140°.
,, Aug. 8, 8·6
(measured 1900·6, 140°·3, 7″·9).

			M.
No. 68.	$17^h\,57^m\,57^s{\cdot}6$	$-27°\,49'{\cdot}6$	8·8
,, 69.	57 57·6	50·4	9·9
,, 70.	57 58·1	52·0	9·5

No. 70 also in Z.C., mag. = 10·0.
Kapteyn:—Thome has only the star (9·8) $57^m\,58^s{\cdot}2$, −27° 51′·5 which seems to be the star of Z.C.
Cape:—1897, Sept. 5. 68 and 70 = 9·0 mag.; 69 = 9·8 mag.
Cor. D.M. $17^h\,57^m\,47^s$ −27° 53′·5 = 9·0 mag., not 9·7 mag. on this occasion.

No. 71.	$18^h\,29^m\,19^s$	$-34°\,28'{\cdot}5$	9·2

Kapteyn:—Thome has a star 9·9 mag. at $29^m\,13^s{\cdot}5$ −34° 29′·9. Position of C.P.D. star certainly correct. Images normal on three plates.
Cape:—1898, June 6. (9·7 Cor. D.M. scale or) 9·2 mag. There is no star in Cor. D.M. position, there is a star 1′ or 2′ further S.
1899, Sept. 2. 9·7 mag. in position given. The 9·9 mag. in Cor D.M. S.*pr.* is invisible, and no doubt it is identical with C.P.D. star. Hereabouts many C.P.D. mags. require a correction of +0·4 or 0·5 to agree with visual observations.

No. 72.	$19^h\,8^m\,6^s{\cdot}3$	$-28°\,6'{\cdot}1$	9·2

Kapteyn:—Plates referred to. Both on *c.* and *m.* the mag. is 9·2.
Cape:—1897, Aug. 19. Mag. 9·75 on Cor. D.M.'s scale = 9·3 on C.P.D. neighbouring scale.

No. 73.	$19^h\,54^m\,20^s{\cdot}0$	$-33°\,21'{\cdot}1$	9·1

Kapteyn:—Probably 10^s error in Thome, and our star identical with Thome's (9·4 mag.) $54^m\,9^s{\cdot}4$, −33° 21′·2. Plates referred to. Both on *c.* and *m.* the mag. is 9·1.
Cape:—1897, Aug. 19. Mag. 9·3; no 9·4 mag. in Cor. D.M.'s position.

No. 74.	$20^h\,8^m\,43^s{\cdot}0$	$-23°\,51'{\cdot}9$	9·1

Kapteyn:—The mag. of C.P.D. on plates −21½°, $20^h\,20^m$ and for the stars of which the declination exceeds 23° 50′ of Southern declination are slightly uncertain, one of the plates being evidently somewhat poor. For this reason the Zone −23° 50′ to −24° 0′ was measured also on plates −26½°, $20^h\,15^m$. On this plate, however, our star was found to be even somewhat brighter, mag 9·0.
Also missing in Orm. Stone's D.M.

mag.		mag.
Cape:—1897, Aug. 19, 9·4	1898, Oct. 28, 9·4	
,, Sept. 5, 9·4	,, Nov. 4, 9·4	
,, ,, 13, 9·4		

With reference to this list, Dr Thome has the following remarks in the *Ast. Nach.* No. 3784:—The following stars were not observed here, being always rated as below 10·0. Nos. 5, 8, 13, 18, 22, 26, 34, 35, 40, 45, 47, 48, 51, 53, 56, 61, 66, 67, 69.

No. 1 =	Cor. D.M.	−33°, 1655	should be	$12^s{\cdot}1$
,, 2 =	,,	−28, 1751	,,	29°
,, 3 =	,,	−28, 1792	,,	36′·7
,, 4 =	,,	−34, 2809	,,	33′·5
,, 7 =	,,	−31, 4207	,,	12′·7
,, 10 =	,,	−33, 3930	,,	$52^s{\cdot}5$
,, 14 =	,,	−33, 4351	is C.P.D. 1877	See note below *.
	,,	−33, 4352	,, 1879	

No. 21 omitted by mistake, 8·7, $12^h\,36^m\,32^s{\cdot}5$ −32° 59′·8.
The remaining stars were observed once each as 10, but being presumably fainter than 10·0, were not looked up. Our small power does not permit us to observe clusters in detail.

* No. 14. These identifications assume errors of 4 secs. in the Cordoba positions. My observations, however, show stars in the printed positions as well as in the C.P.D. positions.

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REVISION OF STARS CONTAINED IN RECENTLY PUBLISHED CATALOGUES BUT MISSING IN C.P.D.

CAPE CATALOGUE, 1865.

Number.	Mag.	1875. Right Ascension.	1875. South Declination.	No. of Observations.	Revision or Remarks.
		h m s	° ′		
243	10	3 4 47	56 37·2	5–6	Cape:—1899, Dec. 16, 10 mag. sufficiently near position to make identity highly probable.
290	10	3 31 14	56 44·5	4	,, ,, 15, 10·2 mag.
291	10	3 31 17	56 51·6	4	,, ,, ,, 10 ,,
329	10·5	3 54 6	56 54·8	4–5	,, ,, ,, 10·3 ,,
526	8·5	6 8 30	45 26·5	2	,, ,, 16 10 ,, sufficiently near position to make identity highly probable. 1900, Mar. 6, =9·8 mag., Apr. 3, 10·1 mag., May 6, 9·8 mag. Is Cor. D.M. —45° 2363, 10 mag.
528	9·5	6 9 55	45 16·3	2	1900, Mar. 6, =9·6 mag., Apr. 3, 9·9 mag., May 6, 9·6 mag. Is Cor. D.M. —45° 2375, 10 mag.
557	10	6 31 23	41 9·2	4	Identical with Cor. D.M. —41° 2473, $6^h\ 31^m\ 22^s$ —41° 8′·8 10 mag.
1122	10	13 25 56	46 53·5	4	Cape:—1900, Mar. 16, 9·3 mag., May 8, 9·4 mag. Is Cor. D.M. —46° 8718, 9·6 mag.
1302	9	15 6 4	47 33·7	4	,, ,, ,, ,, 9·8 mag. Is Cor. D.M. —47° 9805, 10 mag.

SECOND WASHINGTON CATALOGUE, 1875.

Number.	Mag.	1875. Right Ascension.	1875. South Declination.	No. of Observations.	Revision or Remarks.
		h m s	° ′		
867	11·4	4 9 51	29 16·2	6	The observations were made in 1881, 1883, and 1887. Cor. D.M. —29° No. 1638, 10 mag. $4^h\ 9^m\ 49^s$ —29° 15′·8 is no doubt the same star, but it has not been so identified at Washington.
1948	9·1	9 16 1	26 16·2	3	See List II. (*bis.*) No. 91.
2031	...	9 42 17	33 5·6	1	Not in Cor. D.M. Cape 1900, Mar. 6, 11·5 mag. very near position, but by alignment it looks about 1′ further north.
2813	...	14 11 30	20 16·1	3	Is No. 106 of List I. of Vol. I. p. (76). See page 5A.
2823	10·5	14 13 26	20 21·2	5	Is No. 107, List I. ,, ,, ,,
2826	12·0	14 14 8	20 18·1	4	Observed in 1867, 1885 and 1886.
2845	11·4	14 22 33	20 19·7	6	,, ,, 1875, 1880 and 1885.
2967	10·3	15 11 6	25 55·7	4	,, ,, 1866 and 1885. Is 9·9 mag. in Cor. D.M.
3025	11·0	15 26 32	23 12·5	4–5	,, ,, 1869, 1885 and 1886. Is no doubt = Cor. D.M. —23° 12,379, 10 mag. $15^h\ 26^m\ 31^s$ —23° 12′·8.
3075	10·8	15 40 54	23 22·1	6	Observed in 1869, 1885 and 1886. Is Cor. D.M. —23° 12,524, 10 mag.
3370	10·5	16 57 38	23 28·2	1	Cor. D.M. —23° 13,089, 10 mag. at $16^h\ 57^m\ 42^s$ —23° 28′·0.
3371	10·5	16 57 49	23 28·1	1	Cor. D.M. —23° 13,092, 10 mag. $16^h\ 57^m\ 51^s$ —23° 27′·8.
3397	11·2	17 5 36	31 47·9	3	Observed in 1885 and 1886. In Cor. D.M. = 10 mag.
3419	11·0	17 11 33	23 24·1	5	Is 9·7 mag. in Cor. D.M.
3436	10·5	17 15 37	23 6·1	6–8	,, 9·7 ,, ,, ,, ,,
3519	11·3	17 36 0	22 17·5	8	,, 9·7 ,, ,, ,, ,,
3525	11·6	17 36 57	22 18·5	7	Observed in 1883, 1885 and 1886. Not in Cor. D.M.
3527	11·4	17 37 6	27 8·5	3	,, ,, 1880 and 1885. ,, ,, ,, ,,
3569	10·7	17 44 21	22 17·9	4	,, ,, 1883. ,, ,, ,, ,,
3585	11·2	17 45 59	22 16·4	3	,, ,, 1883.
3626	10·9	17 58 33	25 22·3	4–3	Is 10 mag. in Cor. D.M.
3771	10·5	18 31 54	27 38·2	6	,, 9·9 ,, ,, ,, ,,

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Number.	Mag.	1875. Right Ascension.	1875. South Declination.	No. of Observations.	Revision or Remarks.
		h m s	° ′		
3772	11·2	18 31 57	27 37·4	4	Is 10 mag. in Cor. D.M.
4036	9·1	19 30 48	26 47·0	3	„ 9·1 „ „ „ „ Also in W.Z., but not accordant in δ.
4194	11·6	20 4 42	27 25·9	5	„ 10 „ „ „ „
4394	10·8	20 47 29	19 5·9	3	Observed in 1866 and 1884.
4476	11·0	21 10 1	23 58·8	4	„ „ 1876 „ 1880. 9·5 mag. in Cor. D.M.
4477	11·2	21 10 10	23 57·0	4	„ „ 1876 „ 1880. Washington identifies it with Cor. D.M. —23° No. 16,811, 9·8 mag. at 21h 10m 7s —23° 58′·6.
4490	10·3	21 14 37	22 14·9	4	Observed in 1881 and 1886. Is 9·8 mag. in Cor. D.M.
4502	11·0	21 18 5	22 4·2	4	„ „ 1881 „ 1884. „ 9·7 „ „ „ „
4603	...	21 46 21	28 40·5	1	Not in Cor. D.M. Cape:—1899, Dec. 22, 11·5 mag. in approximate position. „ „ 24, 11·5 „ 1900, Aug. 20, 11·5 „ near position. But this can hardly have been seen in a T.C. instrument. Adding 1·5 mag. to bring the scale to that used at Washington gives 13·0 as the mag. Dr Ristenpart informs us that this star was observed by accident for the planet "Thalia" which was then under observation at Washington, and that the planet's magnitude was 11·8 on that day according to the B.J. Also that the planet was actually observed on two adjacent days.

MADRAS GENERAL CATALOGUE, 1875.

Number.	Mag.	1875. Right Ascension.	1875. South Declination.	No. of Observations.	Revision or Remarks.
		h m s	° ′		
1285	10·0	6 0 23·5	31 30·9	2	(1 in 1867 and 1 in 1869). The Cor. D.M. has a star at 29′·1. Only one star seen here, 1902, Apr. 23, viz. 9·8 mag. in Madras position.
1905	8·0	8 26 23·5	55 2·2	1	Probably δ in error and star = C.Z. VIII. No. 2209 8·0 mag. Divergences:—α 0s·02 δ 2′ 14″·4.
2294	9·6	10 5 2·6	33 32·0	5	Also in Cor. D.M. 8·9 mag. See List II. (*bis.*) No. 109.
2659	9·0	11 40 36·3	37 10·9	1	Not in Cor. D.M. Cape:—1902, May 27. No star there. [Perhaps δ in error 10′, if so = Cor. D.M. −37° 7463, 9·7m. Ristenpart.]
2780	8·6	12 10 41·4	48 28·1	1	C.P.D., Cor. D.M. and Madras have a star about 10 secs. *pr.* and 1′ 36″·2 S. No star at 41s in either D.M.
4128	10·4	18 30 6·5	46 55·0	3	Observed once in 1867 as 10·3 mag., and twice in 1876 as 10·5 mag. Not in Cor. D.M.
5259	9·4	23 47 32·1	60 40·0	5	α requires +1m to make it = C.Z. XXIII. No. 1321. This star has a well marked *p.m.* of +0″·50 in δ.

REFERENCES TO THE SECOND WASHINGTON CATALOGUE OF STARS, 1875.

The following stars, which in the C.P.D. are without any references to catalogues of precision will be found in the 1875 Washington Catalogue which was published in 1898.

−19° Nos. 5642, 7550.	−31° Nos. 2260, 4748.
−21° „ 5847.	−32° „ 2696, 3359, 6058.
−22° „ 5942, 7992.	−33° „ 2713, 3167.
−23° „ 6475, 6527, 6599.	−34° „ 4589, 5322.
−24° „ 5403, 5775, 7042.	−35° „ 2153, 2216, 2220, 8871.
−25° „ 6862, 7105, 7117.	−37° „ 8093, 8198, 8213, 9428.
−26° „ 1788, 6793, 6800, 6804, 6806, 6807, 6808.	−40° „ 9054.
−27° „ 4793, 5739, 6475, 6484.	−42° „ 5397.
−28° „ 4933, 5961, 5964, 6728.	

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ADDENDUM.

REMARKS BY DR F. W. RISTENPART.

As this sheet was undergoing its final revise, the following valuable notes were received from Dr Ristenpart, who is in charge of the *Bureau der Commission für die Geschichte des Fixsternhimmels.*
Notes added by the writer are bracketed thus [ ].

List I.

Star No. 20. Read $2^h\ 22^m\ 43^s{\cdot}66\ -24^\circ\ 46'\ 33''{\cdot}2$ (1850). (Deichmüller.)
37. „ 5 40 17·58 −16 42 19·6 „
41. „ 6 30 38·18 −35 57 51·6 „ = g 308.
43. The Z.C. corrected position is taken from the *Astr. Nach.*, No. 3227. In *Cordoba Results*, vol. 18, the δ is given as $-36^\circ\ 52'\ 43''{\cdot}8$. [Even so, no star in the C.P.D.]
51. α belongs to *t* 3165, δ to *t* 3157.
52. α + 1ᵐ, δ − 10′ = C.P.D. −21°,2633.
63. α with δ = $-29^\circ\ 29'$ = G 11390.
δ corrected $-1^{rev.}$ (= 31″·3) = W 3510. } After examination of the original observations.
66. Read $8^h\ 29^m\ 9^s{\cdot}19\ -30^\circ\ 46'\ 14''{\cdot}6$ (1850).
81. „ 11 22 24·97 −23 9 57·2 (1880). [Is thus same star as M 3888.]
92. α − 1ᵐ, δ + 1°, corrected by Schönfeld = C.P.D. −20°,5585.
111. For XXII read XVII.
117. Read $15^h\ 19^m\ 21^s{\cdot}64\ -30^\circ\ 34'\ 10''{\cdot}5$ (1850).
128. Downing has partly excluded and partly used the observations in *t* 7376.
135. Variable. (*Cor. Res.*, vol. 18, p. xlix.)
146. $-34^\circ\ 53'$ original restored. (*Cor. Res.*, vol. 18.) [Even so, no star in the C.P.D.]
175. If for tally B we read tally E, α will be increased by $46^s{\cdot}22$, and the star will be = *G* 124.
182. Read $18^h\ 46^m\ 51^s{\cdot}05\ -23^\circ\ 56'\ 13''{\cdot}4$ (1850).
186. α of *l* 36910 corrected by −1ᵐ is a second wire observation of the preceding star of the zone = *l* 36857. δ must be corrected by −1°, and thus becomes = a 15465, the α of which was not observed by Lalande.
187. No other explanation can be given.
191. That this object was Vesta was pointed out by Schönfeld, *Astr. Nach*, vol. 111, col. 159.
198. α belongs to the same star as C.P.D. −35°,8915.
δ „ „ another star, viz., W 9248. } After consulting the originals.
212. This star should be struck out. (Küstner.)
221. For *t* 319 read *t* 519. *t* 509 is included in *t* 519 in Downing's revision. Kapteyn's suspicion verified.
224. [Dr Ristenpart points out that there is a contradiction here. This star does not appear on the C.P.D. plates, but it is given as 9·6 mag. in the Cord. D.M., and I observed it as 9·6 mag. in 1897. Nevertheless, in the *Astr. Nach.*, No. 3539, Dr Thome states that the star has been looked for many times, and has always been missing. He therefore restores the original declination $-38^\circ\ 29'\ 8''{\cdot}0$. The position of the Cord. D.M. star is $4^h\ 36^m\ 9^s{\cdot}6\ -38^\circ\ 38'{\cdot}8$, and it is marked Z.C The C.P.D. has a star at $4^h\ 36^m\ 13^s{\cdot}5\ -38^\circ\ 38'{\cdot}0$ which is not in the Cord. D.M. It is the latter star which I observed, and at the time the difference of α was overlooked. There is no star exactly in the Cord. D.M. place, and the reference Z.C. is erroneous, as the Z.C. star does not exist.]
229. Read $6^h\ 48^m\ 21^s{\cdot}40\ -47^\circ\ 14'\ 41''{\cdot}5$ (1850).
234. „ 7 47 24·03 −38 7 33·8 „
242. g 1261 corrected by two wire intervals will become another observation of g 1260.
267a. Z.C. 816. $16^h\ 11^m\ 25^s\ -43^\circ\ 5'{\cdot}9$. 10 mag. [Dr Ristenpart suggests that this star, which is in neither the C.P.D. nor the Cord. D.M., should be looked for. Professor Kapteyn assumes (see Errata in Star Catalogues) that α should be $16^h\ 10^m\ 49^s\pm$. There is a 9·2 mag. star in this position in the Cor. D.M. Looked for 1902 July 14 : no star in C.Z. position.]
310. r is quite erroneous. Not found by Powalky.
317. [*C. du C.* plate No. 5314. $9^m{\cdot}8$.]
318. [„ „ „ No star in position.]
325. α − 1 wire interval makes this star = C.P.D. −68°,23. [*C. du C.* plate No. 5315, 1899 Mar. 30, shows a doubtful image at about $0^h\ 34^m\ 7^s\ -68^\circ\ 18'$.]
330. Stone's assumption correct according to Powalky's MS.
336. [*C. du C.* plate No. 5313, 1899 Mar. 30, shows a $9{\cdot}7^m$ star in the required position.]
340. δ = $-47^\circ\ 17'$ (Powalky) = Z.C. 0^h,1392.
354. Read $-69^\circ\ 0'\ 8''{\cdot}3$ (1850) (Washington) = C.P.D. −68°,55.

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Star No. 368. Not in Powalky's reduction.
373. [The observation of 1899 Feb. 3 seems to be erroneous.]
386. [On 6th line after 30′. insert "Cape."]
414. [1902 July 11. Looked for: no star.]
425. Is C.P.D. −79°,99. [I had = −79°,95?, but Dr Ristenpart's identification is closer in α and δ, and is no doubt correct in spite of the difference of magnitude. *g* gives 10 mag., No. 99 is 8·9 mag., No. 95 is 9·8 mag. photo or 9·5 mag. visual.]
436. $\alpha - 5^m = 3^h\ 49^m\ 26^s{\cdot}72 - 86°\ 4'\ 45''{\cdot}2$ (1850) = C.P.D. −86°,37. (Washington.)
442. α belongs to *t* 1521, δ to *t* 1518.
445. [On *C. du C.* plate No. 5300, the Cape star is shown as about 10^m.]
453. Read $5^h\ 5^m\ 55^s{\cdot}13 - 85°\ 18'\ 0''{\cdot}9$ (1850). (Washington.) [Is thus the star seen here at 85° 16′ which is in the C.P.D.]
458. Add :—But there is still no star in the C.P.D.
459a. *g* 3152. $5^h\ 22^m\ 35^s - 75°\ 13'{\cdot}3$. 11 mag. (Washington :—No error.) [This star is not in Prof. Kapteyn's list. Looked for 1902 July 11 and seen = 9·7 mag.]
466. Kapteyn's suggestion is correct. (Washington.)
473–4. Same star. The middle is $5^h\ 56^m\ 45^s{\cdot}33 - 69°\ 26'\ 46''{\cdot}1$ (1850). (Washington.)
479. Yes.
487. δ in error by 5 wire intervals in both observations, = *g* 4237, where it must be included.
489. δ − 1 wire = *g* 4281.
499. Error of 1^m in α. Difference of δ = 0″·5.
501. δ +15′ = C.P.D. −75°,416. (Washington.) [Is this a try or a real correction, as there is a star close to *g*'s position?]
503. $\alpha + 1^m$, δ +4 wire intervals = *g* 4715.
509. $\alpha + 5^m$ establishes agreement with C.P.D. −71°,615 = Z.C. 7^h,32.
511. α = C.P.D. −54°,1400. δ = C.P.D. −54°,1396. [Downing's revision of *t* has the same error.]
512. $\alpha + 1^m$, $\delta - 1'$ = *g* 5328.
513. Identical with *t* 3401; magnitude erroneous.
517. If sign of micrometer is changed, then $\alpha\ 8^h\ 12^m\ 23^s{\cdot}46$ δ −75° 35′ 0″·1 (1850) Washington, and is the star observed at the Cape in May 1900.
521. δ − 1 wire interval = C.P.D. −81°,252.
527. Read $8^h\ 32^m\ 39^s{\cdot}89 - 62°\ 43'\ 25''{\cdot}8$ (1850) = C.P.D. − 62°,1052.
532. δ +4 wire intervals = C.P.D. −72°,725. (Washington.)
536. $\alpha - 1^h$ = C.P.D. −75°,542. (Washington.)
540. $\alpha + 1^h$ = „ −76,613. There is a clerical error in Kapteyn's list, as k is correct.
542. δ +4 wire intervals = C.P.D. −63°,1112.
551. δ −2 „ „ = „ −81,339 = *g* 6284.
561. The star suggested by Kapteyn is the Rumker star according to Powalky's reduction.
564. Kapteyn's suggestion right. (Washington.)
573a. Z.C. 4476. $9^h\ 56^m\ 27^s - 67°\ 9'{\cdot}4$. 10 mag. Marked with a? [Not in Kapteyn's list. Looked for 1902 July 14: no star there.]
581. Kapteyn's suggestion correct :—α + 20^s. (Washington.)
590. „ „ „ δ − 2 wire intervals. (Washington.)
593. Perhaps $\delta - 7'$ = *G* 64?
598. g 1354. $\alpha - 1^m$, δ +1 wire interval ($4\frac{1}{4}'$) = G 14841.
600. Kapteyn's suggestion correct. (Washington.)
613. „ „ „
627. Read $11^h\ 42^m\ 56^s{\cdot}84 - 84°\ 45'\ 51'{\cdot}9$ (1850) = C.P.D. −84°,360.
640. Identical with Z.C. 142.
642. $\alpha - 5^m = 12^h\ 5^m\ 13^s{\cdot}73 - 74°\ 24'\ 6''{\cdot}6$ (1850) = C.P.D. −74°,887.
646. If δ could be corrected by −58′ it would be = C.P.D. −67°,2010, but Washington writes that the other stars of the zone are contained within 10′ of declination, hence conjecture very doubtful.
649. Washington: — α − 3 wire intervals, δ − 1 wire interval = $12^h\ 31^m\ 36^s{\cdot}00 - 74°\ 53'\ 13''{\cdot}5$ (1850) = C.P.D. −75°, 831.
652. If δ − 20′ and α + 1 wire interval = C.P.D. −87°,213, but Washington writes that all stars of this zone were observed on the middle wire, therefore an error of this kind is very improbable.
653. If $\alpha - 50^{secs.}$, $\delta - 5'$ = *g* 8885.
654. α belongs to *t* 5913 and is to be included there, δ belongs to the star G 17466.
656. I think δ should be corrected + 1 wire interval, by which the star observed at the Cape would be reached.
662. In the C.P.D. there is a star 3′ S.
670. An erroneous repetition of *g* 8514.
676. Perhaps identical with G. 18,163?
677. Probably identical with Z.C. 1037. This supposes that this star was observed twice in Zone 611, the observation of Z.C. 1009 being reduced one tally too small, about $29^{secs.}$.
679. Kapteyn's supposition correct, δ still 10″ different from Gould.
687. $\alpha + 42^s{\cdot}02$ = *g* 9589, where it is to be included.
688. Very probably = G. 18,802.
689. Washington :—One wire to be corrected by $-10^{secs.}$ and δ by −3″·33.

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Star No. 691. Kapteyn's supposition correct.
701. Perhaps $\delta - 25'$ = C.P.D. $-63°,3165$.
711. Very probably = g 10010, but how the error arose is not clear.
713. $\alpha = 10^h\ 24^m\ 36^s$ (1850) = C.P.D. $-66°,2575$.
717. Kapteyn's suspicion correct.
718. Perhaps α belongs to the same star as g 10493 and δ to g 10495. The star seen at the Cape cannot be the Z.C. star.
722. The δ of g 10598 is to be corrected by $+ 1'$.
729. Erroneous repetition of g 11224.
730. Kapteyn's suspicion correct.
732. " " "
740. Erroneous repetition of g 10607.
741. " " " 13000.
744. " " " 11206.
747. " " " 13102.
748. For $20^{secs.}$ read $-20^{secs.}$.
749. Yes.
752. $\alpha - 1$ wire interval = $16^h\ 10^m\ 7^s{\cdot}45$ $-75°\ 27'\ 45''{\cdot}9$ (1850).
759. Minute of α correct.
761. For $54'{\cdot}3$ read $54''{\cdot}3$.
780. Probably an erroneous observation of Z.C. 450.
784. Certainly $\delta + 1$ wire interval = g 12505.
787. I do not think it impossible to be the same star. [My rough place differs $7^{secs.}$ in α from G which depends on 3 obs. The star should be looked up again.]
788. In *Cor. Res.*, vol. 18, = $17^h\ 17^m\ 46^s{\cdot}89$ $-60°\ 47'\ 14''{\cdot}2$.
802. Kapteyn's suspicion correct.
811. $\delta + 3$ wire intervals = C.P.D. $-66°,3162$. $\alpha = 17^h\ 40^m\ 40^s{\cdot}13$, $\delta = -66°\ 29'\ 27''{\cdot}9$ (1850).
813. g 12919 is to be corrected $+ 10^{secs.}$.
818. $\delta - 1° = g$ 13020.
844. $\alpha - 1$ wire, $\delta - 1$ wire = $18^h\ 49^m\ 18^s{\cdot}23$ $-57°\ 10'\ 1''{\cdot}9$ (1850) = G 25954.
846. Add a "?" after the word "misprint."
856. $\delta - 4$ wire intervals = C.P.D. $-68°,3193$. (Washington.)
865. $\alpha + 1$ " " = " $-65,3820$. (")
870. Read $19^h\ 12^m\ 40^s{\cdot}70$ (1850) = C.P.D. $-76°,1343$.
871. Another observation of g 14229.
892. Kapteyn's suggestion impossible; observed same night. (Washington.) [This note is now perhaps superfluous, as the star has been seen in the position queried.]
906. Therefore g should be corrected by $+ 1^m$.
922. g 1850 should be struck out, in α only 1 wire, not observed in δ. (Washington.)
925. Yes.
940. It should be decided whether δg is to be corrected by $+27''{\cdot}9$ or not.
955. Kapteyn's suggestion is approved by Powalky's MS. Paramatta Catalogue at the Hamburg Observatory.
970. $\delta + 16' = g$ 16485. (Washington.)
971. Erroneous repetition of g 16432.
973. And $\delta - 1$ wire interval = C.P.D. $-71°,2772$. (Washington.)

List II. *bis.*

Star No. 72. [For 52^m read 53^m.]
119. [For 27° read 24°.]
219. Was not Vesta.
245. [Again looked up:—1902, July 16. No star there. The rejected C.P.D. star seen.]
263. See Abetti, *Astr. Nach.* No. 3640, col. 258.
301. [This star appears as $10^{m}{\cdot}5$ on a *C. du C.* plate.]

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ANNALS OF THE CAPE OBSERVATORY, VOL. IX.

REVISION

OF THE

CAPE PHOTOGRAPHIC DURCHMUSTERUNG,

PART II.

VARIABLE STARS, MISCELLANEOUS STARS, ETC.

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ERRATA:

Page 64B. 2nd col. at foot of page:—the J.D's should be increased by 365.
,, 74B. 2nd last line:—For *reflection* read *reference.*
,, 125B. Last col.:—For 1899 read 1900.

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LIST OF STARS SUSPECTED OF VARIABILITY.

By Professor J. C. KAPTEYN.

With Observations and Notes by R. T. A. INNES.

A list of stars suspected of variability was received from Professor Kapteyn on 30th August 1899. It includes all his previous lists: see C.P.D., vol. i. p. (93); *Astr. Nach.*, Bd. 142, c. 76; and MS. lists dated Groningen 27th August 1895 and 3rd December 1896. The results of revision at this observatory follow the data on which Kapteyn based his suspicion of variability. Where the star is undoubtedly variable, it is carried over to the "List of Variable Stars" which appears later in this volume.

It is to be remarked that many of the stars on Kapteyn's list have been found to be variable elsewhere before the work on them could be taken up here.

The list contains 145 stars, of which no less than 41 have turned out to be variable. Kapteyn did not include in his lists of suspected variables all the likely cases he came across in the course of the C.P.D. work, as can be seen by reference to his lists of missing stars in Part I. of this volume.

In the following pages the sign < means "Invisible." The sign < followed by say 11·5, means that under the circumstances that the observation was made, a star of 11·5 mag. would certainly have been visible, but that the star in question was not seen.

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LIST OF STARS SUSPECTED OF VARIABILITY.

BY PROFESSOR J. C. KAPTEYN WITH RESULTS OF OBSERVATIONS MADE AT THE CAPE.

No. 1. $0^h\ 2^m\ 40^s$ $-57^\circ\ 45'{\cdot}3$

Kapteyn :—On plates 60°, 0^h, 9·8 mag.
$55\frac{1}{2}°$, 0^h, <11·0 ,,

Cape :—1899, Sept. 24, < 11 mag.
,, ,, 27, < 11·5 ,,
,, ,, 30, < 10·5 ,,
,, Oct. 25, < ,,
,, Dec. 4, < 11·5 ,,
1900, Jan. 1, < ,,
,, ,, 22, < 11·0 ,,
,, Feb. 4, < 11·0 ,,
,, ,, 26, < 11·5 ,,
,, Mar. 6, < 10·5 ,,
,, June 14, < 11·0 ,,
,, Aug. 13, < 10·5 ,,
,, Sept. 1, < 11·0 ,,
,, Oct. 15, < 12·0 ,,
,, Nov. 10, < 12·5 ,,
,, ,, 26, < 11·5 ,,
,, Dec. 12, < 11·5 ,
,, ,, 29, < 11·5 ,
1901, Jan. 8, < 11·5 ,,
,, ,, 21, < 11·5 ,,
,, Feb. 9, < 11·0 ,,
,, ,, 19, < 11·6 ,,
,, Mar. 13, < 10·3 ,,
,, Apr. 10, < 11·5 ,,
,, ,, 24, < 11·7 ,,
,, May 5, < 11·2 ,,
,, June 5, < 11·5 ,,
,, ,, 12, < 12·0 ,,
,, ,, 29, < 11·5 ,,
,, Aug. 27, < 11·0 ,,
,, Sept. 14, < 12·0 ,,
,, Oct. 15, < 12·5 ,,
,, ,, 29, < 12·0 ,,

This is C.P.D. −57°, No. 12.

Professor E. C. Pickering with great kindness had this star looked for on the plates taken at Arequipa. Plates taken on 1890, Sept. 12 and 23; 1895, Sept. 7; 1897, Nov. 22; 1899, Aug. 18 and Nov. 13; and 1900, Aug. 30, do not show this star.

Professor Kapteyn finds, on a re-examination of the C.P.D. plates, that on both there is a star-like defect of the film. The star is to be struck out of the C.P.D.

Professor Pickering finds that a faint star in the neighbourhood is slightly variable.

No. 2. $1^h\ 12^m\ 29^s$ $-25^\circ\ 50'{\cdot}3$

Kapteyn :— In Thome, 8·8 mag.
(No remark about colour.)
In C.P.D., 10·5 ,,

Cape :—1899, Sept. 25, 9·2 mag. Thome's scale = 10·1 mag. C.P.D. scale.
,, Oct. 25, 9·35 ,, Thome's scale = 9·6 mag. in my standard.
1900, Jan. 6, 9·3 ,, Thome's scale.

No. 3. $1^h\ 32^m\ 34^s$ $-23^\circ\ 33'{\cdot}3$

Kapteyn :—In Thome, 9·0 mag.
,, Orm. Stone, 9·0 ,,

This star seems to deserve some particular attention. On *m.* there is a speck in this position which may perhaps cover the image of a star. On *c.* there is some nebulosity exactly in this position.

Nothing in Dreyer's Catalogue.

Cape :—1899, Sept. 25, 9·2 mag., white. No nebulosity seen.
1900, Jan. 6, 9·0 ,,

No. 4. $1^h\ 49^m\ 25^s$ $-68^\circ\ 33'{\cdot}6$

Kapteyn :—
Plate 70°, $1\frac{1}{2}^h$ rejected (1885, Nov. 24), 9·2 mag.
$2\frac{1}{2}$,, (,, Dec. 8), 6·7 ,,
$1\frac{1}{2}$ definitive (1889, June 7), 6·6 ,,
$2\frac{1}{2}$,, (,, ,, ,,), 6·5 ,,

In G. *var.* In Ch. III. among the unconfirmed stars.

Cape :—1899, Sept. 23, 6·9 mag.

This is η_1 Hydri, and was observed by me whilst in Sydney. See *B. A. A. Journal*, vol. vi. p. 489.

This star can be recommended to those who have not access to powerful instruments, but who desire to observe variable stars. See also No. 96 on page 12B.

No. 5. $2^h\ 11^m\ 21^s$ $-80^\circ\ 41'{\cdot}5$

Kapteyn :—In S., 8·0 mag., 4 obs.
,, *g.*, 10·0 ,, 2 ,,
,, C.P.D., 9·8 ,,

On plates extremely faint; only found on looking expressly for it.

Cape :—1878, Dec. 18, 8 mag. } Transit-Circle.
,, ,, 19, 7–8 ,, }
,, ,, 21, 8–9 ,, }
,, ,, 22, 8–9 ,, }
1899, Sept. 25, [9·3] ,,
,, Nov. 11, 9·1 ,,
,, Dec. 4, 9·1 ,,

No. 6. $2^h\ 31^m\ 53^s$ $-27^\circ\ 31'{\cdot}3$

Kapteyn :—Z.C., 9 mag., 1 obs.
Missing in C.P.D. and in Thome.

This star does not exist. See Results of Revision, List I. No. 21, page 1A *ante*.

This has no doubt been included by Kapteyn owing to my erroneous observation of 1st. Aug. 1896.

No. 7. $2^h\ 38^m\ 53^s$ $-32^\circ\ 14'{\cdot}2$

See List II. *bis* No. 33, Results of Revision, page 41A *ante*.

No. 8. $2^h\ 56^m\ 52^s$ $-51^\circ\ 8'{\cdot}2$

See Variable Stars.

No. 9. $3^h\ 16^m\ 34^s$ $-30^\circ\ 29'{\cdot}0$

See Results of Revision, List II. *bis* No. 44.

No. 10. $3^h\ 58^m\ 15^s$ $-22^\circ\ 2'{\cdot}7$

Kapteyn :—See *Astr. Nach.*, No. 2987.
Bonn, 1876, Jan. 26, 9·3 mag.
,, 1879, Dec. 16, 9·3 ,,
,, 1880, Jan. 11, 9·2 ,,
Cordoba DM., 9·6 ,,
No. 2085, C.P.D. Plate. 1889, Feb. 8, 9·9 mag.
2093, ,, ,, ,, ,, 11, 9·25 ,,
2132, ,, ,, ,, ,, 21, 9·25 ,,
2143, ,, ,, ,, ,, 28, 9·4 ,,

	mag.		mag.
Cape :—1899, Feb.	3, 9·3	1899, Mar.	7, 9·25
,, ,,	12, 9·4	,, ,,	17, 9·0
,, ,,	15, 9·2	,, Apr.	28, [9·3]
,, ,,	17, 9·2	,, Nov.	11, 9·6
,, ,,	26, 9·3	1900, Jan.	6, 9·6

The evidence of variability is not strong.

Six plates taken in 1895-6 gave no evidence of variability.

No. 11. $4^h\ 50^m\ 56^s$ $-21^\circ\ 24'{\cdot}9$

See Variable Stars.

No. 12. $4^h\ 59^m\ 31^s$ $-22^\circ\ 4'{\cdot}4$

See Variable Stars.

No. 13. $5^h\ 7^m\ 38^s$ $-48^\circ\ 39'{\cdot}6$

See Variable Stars.

No. 14. $5^h\ 32^m\ 20^s$ $-24^\circ\ 28'{\cdot}8$

See Results of Revision, List II. *bis* No. 56, page 42A *ante*.

No. 15. $5^h\ 36^m\ 17^s$ $-26^\circ\ 25'$

Kapteyn :—C.P.D., Z.C., and Thome have each two stars here as follows :—

C.P.D.		
(8·0)	$5^h\ 36^m\ 16^s{\cdot}5$	$-26^\circ\ 24'{\cdot}5$
(8·8)	17 ·0	25 ·0
Z.C.		
(8)	16 ·6	24 ·6
(8·8)	17 ·5	25 ·0
Thome.		
(7·7)	17 ·5	23 ·8
(10)	18 ·2	24 ·9

There seem to be two possibilities :—

1. Thome has seen the two stars of the C.P.D. and Z.C. as *one*, and has picked up a faint star 10 mag. which is missing in the C.P.D. and Z.C.

2. Or Thome's stars are identical with ours, in which case the second star would seem to be variable.

Cape :—1899, Oct. 28. 8·0 and 9·2 are about correct. There is no third star. In a low power field such as used by Thome it would be natural to underestimate the small star near a bright one.

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No. 16. $5^h\ 46^m\ 53^s$ $-29°\ 1'·1$

Kapteyn :—C.P.D. Plate. 1889, Mar. 12, 9·3 mag.
,, ,, 15, 9·2 ,,
,, ,, 27, 9·1 ,,
,, Apr. 1, 10·4 ,,

On all plates somewhat near the edge. Chances of variability not very great.

Z.C., 9·5 mag.
Thome, 9·0 ,,

	mag.		mag.
Cape :—1899, Oct.	28, 9·0	1900, Jan.	3, 8·9
,, Nov.	2, 8·95	,, Mar.	27, 9·2
,, ,,	11, 8·85	,, Apr.	3, 9·2
,, ,,	21, 8·9	,, ,,	17, 9·2

No. 17. $5^h\ 54^m\ 19^s$ $-23°\ 0'·7$

Kapteyn :—Thome, 8·3 mag.
C.P.D., 10·6 ,,

Looked up on four plates. Mags. 10·6, 10·6, < 9·8, < 9·2.

Misprint in Thome :—For 8·3 mag. read 9·9 mag.

No. 18. $6^h\ 10^m\ 17^s$ $-33°\ 2'·3$

Kapteyn :—See *Astr. Nach.*, vol. 125, c. 168, No. 3.
C.P.D. Plate, No. 2179. 1889, Mar. 15, 9·2 mag.
2184. ,, ,, 18, 10·0 ,,
2205. ,, ,, 26, 9·3 ,,
2210. ,, ,, 27, 9·2 ,,
2583. 1890, ,, 13, 9·2 ,,
2598. ,, ,, 17, 9·2 ,,

Plates 2179 and 2184 examined under the microscope. No defect in the film or image of the star can be detected.

Thome's DM., 9·7 mag.

	mag.		mag.
Cape :—1899, Feb.	4, 10·0	1899, May	20, 10·1
,, Mar.	21, 9·5	,, ,,	25, 10
,, Apr.	28, 9·55	,, Oct.	28, 9·4
,, May	2, 9·7	,, Nov.	2, 9·8
,, ,,	4, 9·8	,, ,,	18, 9·6
,, ,,	12, 9·7	,, ,,	21, 9·5
,, ,,	14, 9·9		

New scale adopted :—

1899, Nov.	22,		9·65 mag.
,,	28,		9·6 ,,
,, Dec.	1,		9·7 ,,
,, ,,	4,		9·9 ,,
,, ,,	7,		9·7 ,,
,, ,,	13,		9·55 ,,
,, ,,	15,	C.S.T.	9·6 ,,
,, ,,	19,	$2^h\ 14^m$	10·2 ,,
,, ,,	,,	2 58	10·2 ,,
,, ,,	20,	2 49	9·75 ,,
,, ,,	22,	2 22	9·5 ,,
,, ,,	24,	2 31	9·9 ,,
,, ,,	,,	2 59	9·9 ,,
,, ,,	27,	3 12	9·8 ,,
,, ,,	30,	4 44	9·65 ,,
1900, Jan.	2,	3 15	9·6 ,,
,, ,,	3,	3 8	9·8 ,,
,, ,,	4,	3 11	9·75 ,,
,, ,,	5,	3 11	9·8 ,,
,, ,,	6,	3 55	9·5 ,,
,, ,,	7,	4 20	9·65 ,,
,, ,,	10,	3 40	9·55 ,,
,, ,,	12,	4 32	9·6 ,,
,, ,,	14,	3 55	9·5 ,,
,, ,,	16,	4 12	9·5 ,,
,, ,,	17,	4 29	9·6 ,,
,, ,,	22,		9·7 ,,
,, ,,	23,		9·6 ,,
,, ,,	24,		9·65 ,,
,, ,,	25,		[9·6] ,,
,, Feb.	2,		9·6 ,,
,, Apr.	18,		9·5 ,,
,, ,,	21,		9·5 ,,
,, May	3,		9·6 ,,
,, ,,	6,		9·6 ,,

Cape :—1900, May 20, 9·65 mag.
,, ,, 24, 9·6 ,,
1901, Aug. 27, 9·65 ,,

Probably slightly variable, or perhaps an Algol-type variable. The star is in a difficult region, and the range of variation seems to be from 9·6 mag. to 10·0 mag. only.

Five plates taken in 1895–6 gave no evidence of variability.

No. 19. $6^h\ 18^m\ 55^s$ $-34°\ 14'·5$

See Results of Revision, List II. *bis* No. 59, page 43A *ante*.

No. 20. $6^h\ 20^m\ 10^s$ $-82°\ 33'·1$

Kapteyn :— *g*, 10 mag., 1 obs.
C.P.D. Plate 85°, 6^h, 7·8 ,, 2 ,,
80 6 7·7 ,, 2 ,,
80 $7\frac{1}{2}$ 7·5 ,, 4 ,,

In no other catalogue as far as I know.

Cape :—1899, Nov. 12, 8·6 mag.
,, Dec. 4, 8·6 ,,
,, ,, 6, 8·6 ,,
1900, Apr. 3, 8·3 ,,

Mean, 8·5 ,,

No variation proved ; the comparison stars (8·8 and 7·2 mag.) are some distance away.

No. 21. $6^h\ 24^m\ 7^s$ $-44°\ 57'·3$

Kapteyn :— Z.C., $9\frac{1}{2}$ mag.
C.P.D., 8·8 ,,
Thome's DM., 9·7 ,, (But see Cor. Obs., vol. xv. p. 336, "Not found.")

Cape :—Carte du Ciel Plate 2375, 9·0 mag.
1899, Nov. 11, 9·3 mag.
1900, Jan. 3, 9·3 ,,
,, Feb. 8, 9·2 ,,
,, Apr. 3, 9·1 ,,
,, ,, 7, 9·25 ,,
,, ,, 28, 9·1 ,,

No. 22. $6^h\ 40^m\ 42^s$ $-20°\ 39'·2$

Kapteyn :— *b*, 8·8 mag.
S.D., 9·7 ,,
C.P.D., 8·6 ,,

Cape :—In a cluster ; a comparison between the C.P.D. and the B.D. for neighbouring stars gives :—

C.P.D.		B.D.
8·1	=	9·0 mag.
8·7	=	9·5 ,,
8·3	=	9·5 ,,
8·8	=	9·8 ,,
8·3	=	9·0 ,,

or C.P.D. + 0·9 = S.D.

Applying this difference, the discordance is reduced to 0·2 mag.

No. 23. $6^h\ 49^m\ 33^s$ $-24°\ 0'·6$

Kapteyn :—Not in Thome's DM.

C.P.D. Plate, No.	2141.	1889, Feb.	27, 9·4 : mag.
	2146.	,, ,,	28, 9·4 : ,,
	2157.	,, Mar.	5, 8·6 ,,
	2171.	,, ,,	11 9·4 : ,,
	2206.	,, ,,	26, 8·6 ,,
	2228.	,, Apr.	3, 9·9 : ,,

: = star images very near to edge of plate, and magnitude therefore uncertain.

Cape :—1897, Apr. 9, 8·8 mag., white.
,, ,, 13, 8·7 ,,
,, ,, 20, 9·0 ,, yellow.
,, ,, 23, 9·3 ,,
,, May 4, 8·8 ,,
,, ,, 13, 9·0 ,,
,, ,, 22, 8·7 ,,
,, ,, 29, 9·3 ,,

Cape :—1897, June 7, 8·95 mag.
,, ,, 10, 9·0 ,, white.
,, Nov. 24, 9·0 ,,
,, Dec. 6, 9·0 ,,
,, ,, 10, 9·25 ,, (good).
,, ,, 17, 9·3 ,,
,, ,, 23, 9·3 ,,
,, ,, 26, 9·1 ,,
,, ,, 28, 9·3 ,,
,, ,, 30, 9·25 ,,
1898, Jan. 2, 9·3 ,,
,, ,, 5, 9·25 ,,
,, ,, 9, 9·1 ,,
,, ,, 14, 9·0 ,,
,, ,, 19, 9·1 ,,
,, Feb. 9, 9·2 ,,
,, Mar. 2, 8·95 ,,
,, ,, 12, 9·2 ,,
,, ,, 18, 9·2 ,,
,, Apr. 12, 9·0 ,,
,, ,, 23, 9·15 ,,
,, May 7, 9·2 ,,
,, ,, 15, 9·3 ,,
,, ,, 28, 9·0 ,,
,, Dec. 4, 9·4 ,,
1899, May 2, 8·8 ,, yellow.
1900, Jan. 16, 9·2 ,,

Mean, 9·1 ,,

In spite of the range of magnitude 8·7 to 9·4, it is not evident that this star is variable.

No. 24. $6^h\ 50^m\ 51^s$ $-38°\ 29'·9$

Kapteyn :— On *m.*, 9·6 mag.
,, *c.*, 10·2 ,,
Thome's DM., *Nil.*

Cape :—1899, Nov. 12, 10·5 mag.
1900, Jan. 3, 10·5 ,,
,, Apr. 3, 10·4 ,,
,, May 6, 10·3 ,,
,, Nov. 2, 10·5 ,,

No. 25. $6^h\ 56^m\ 18^s$ $-20°\ 19'·5$

Kapteyn :—C.P.D., 9·0 mag.
S.D., *Nil.*
See Introduction to C.P.D., vol. i. p. (86).

Cape :—1900, Jan. 3, 9·5 mag.
,, Feb. 14, 9·35 ,,
,, Apr. 28, 9·05 ,,
,, May 27, 9·3 ,,

No. 26. $7^h\ 4^m\ 46^s$ $-32°\ 43'·6$

See Results of Revision, List III *bis*. No. 6.

No. 27. $7^h\ 5^m\ 25^s$ $-43°\ 48'·7$

Kapteyn :— Z.C., 9 mag.
C.P.D., 9·6 ,,
Thome's DM., 9·8 ,,
See also *Cord. Obs.*, vol. xv. p. 336.
Variability seems pretty certain.

	mag.		mag.
Cape :—1899, May	25, 9·25	1899, June	9, 9·5
,, ,,	31, 9·55	,, ,,	12, 9·4
,, June	3, 9·25	,, ,,	18, 9·6
,, ,,	6, 9·6	1900, Jan.	16, 9·5

The range shown $0^m·35$ is too small to prove variation.

No. 28. $7^h\ 9^m\ 44^s$ $-44°\ 26'·1$

See Variable Stars.

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No. 29. $7^h\ 12^m\ 59^s$ $-46°\ 21'.7$

Kapteyn :—Z.C., 9 mag.
C.P.D. Plate (1890, Apr. 17), 9·1 mag.
(1888, Mar. 3), 9·1 ,,
Not found by Thome. See *Astr. Nach.*, No. 3539.
Cape :—Carte du Ciel Plates, Nos. 1122, 1136, 1155, 1316, 2341, 2609, 3451, 3492, and 3516 examined. No sign of variability; on all, the estimated mag. is between 8·8 and 9·0.

mag.		mag.
1899, Feb. 10,	9·0	1899, June 6, 9·0.
,, ,, 17,	9·0	1900, Jan. 3, 9·0.
,, May 31,	8·9	

Some faint stars closely following.
In the third volume of the Cor. DM. this is $-46°,3034$, mag. 9·6, without any comment.

No. 30. $7^h\ 14^m\ 5^s$ $-24°\ 39'.8$

See Results of Revision, List III. *bis* No. 8.

No. 31. $7^h\ 21^m\ 20^s$ $-43°\ 50'.1$

Kapteyn :— Z.C., 9·5 mag.
C.P.D., 10·0 ,,
Thome's DM., 10·0 ,,
See also *Cord. Obs.*, vol. xv. p. 336.

mag.		mag.
1899, May 25,	9·25	1899, June 9, 9·4
,, ,, 31,	9·4	,, ,, 12, 9·7
,, June 3,	9·4	,, ,, 18, 9·5
,, ,, 6,	9·55	1900, Jan. 16, 9·6

No. 32. $7^h\ 27^m\ 13^s$ $-20°\ 23'.3$

See Variable Stars.

No. 33. $7^h\ 27^m\ 21^s$ $-20°\ 38'.7$

See Variable Stars.

No. 34. $7^h\ 31^m\ 54^s$ $-73°\ 6'.6$

See Variable Stars.

No. 35. $7^h\ 33^m\ 53^s$ $-22°\ 31'.3$

See Results of Revision, List III. No. 5.
Kapteyn adds :—The following stars in the C.P.D. and Thome are also missing in the S.D.

C.P.D.	Thome.		
9·2 mag.	9·5 mag.	$7^h\ 33^m\ 46^s$	$-22°\ 33'.2$
9·2 ,,	9·5 ,,	33 51	32 ·9
9·2 ,,	10 ,,	34 34	13 ·6
9·2 ,,	9·8 ,,	34 43	9 ·4

Nos. 36-37. $7^h\ 41^m\ 21^s$ $-22°\ 40'.9$ / $7\ 41\ 25$ $-22\ 41\ .2$

Kapteyn :—About these stars, see Introduction to the C.P.D., vol. i. p. (87).
Both stars are missing in the S.D., and two other stars 4′ or 5′ south are missing in the C.P.D. Nevertheless, error is excluded according to Deichmüller *Astr. Nach.*, No. 3189); so that it might be desirable to revise the region repeatedly, as one or two of the objects in question might prove variable.
Cape :—Thome has only the first star (No. 36) as 9·7 mag.
1900, Jan. 3. C.P.D. stars seen, 9·0 and 9·1 mag. No two stars 5′ S. as in S.D., and no star = 9·8 mag. in Th.'s position $7^h\ 41^m\ 25^s$ $-22°\ 43'$.
Feb. 14. C.P.D. stars seen.
,, 20. C.P.D. stars seen. No 9·8 mag. in Thome's position $7^h\ 41^m\ 25^s$ $-22°\ 43'$.

No. 38. $7^h\ 42^m\ 41^s$ $-41°\ 4'.0$

See Variable Stars.

No. 39. $7^h\ 48^m\ 4^s$ $-23°\ 51'.4$

Kapteyn :—
C.P.D. Plate, No. 2213. 1889, Mar. 27, 8·4 mag.
2220. ,, Apr. 1, 8·4 ,,
2225. ,, ,, 2, 8·45 ,,
2231. ,, ,, 8, 9·4 ,,
2232. ,, ,, 8, 8·3 ,,
2250. ,, ,, 22, 8·4 ,,
2275. ,, ,, 30, 8·3 ,,
2301. ,, May 10, 8·3 ,,
No defect in the film of plate 2231 nor in the image of the star could be detected. According to the list of plates, there is only a difference of 39^m between the exposing of plates 2231 and 2232.
Thome, 8·7
Z.C., 9·5
See also *Astr. Nach.*, vol. 125, c. 168, No. 5.

mag.		mag.
Cape :—1899, Feb. 14,	9·0	1899, May 25, 8·95
,, ,, 17,	9·0	,, June 6, 9·1
,, Apr. 23,	9·0	,, ,, 10, 9·2
,, ,, 28,	9·0	1900, Jan. 16, 8·95
,, May 10,	8·9	,, ,, 27, 9·0
,, ,, 20,	9·0	

Also photographed 14 times on 6 plates between 1895, Dec. 12 and 1896, Mar. 16. On all the mag. is about 8·8.

No. 40. $7^h\ 55^m\ 49^s$ $-48°\ 36'.6$

Kapteyn :— *t*, 7·8 mag. (2 obs.)
C.P.D., 10·0 ,,
In no other catalogue as far as I know.
Cape :— mag.
Carte du Ciel Plate, No. 910. 1892, Dec. 30, 10·5 ±
1362. 1893 Mar. 16, 10·7 ±
1376. ,, ,, 18, 10·5 ±
2586. 1894, ,, 6, 10·5 ±
Visual :—1900, Jan. 3, 9·0 mag.
,, ,, 4, 9·1 ,,
,, ,, 6, 9·15 ,,
,, ,, 12, 9·1 ,,
,, ,, 27, 9·0 ,,
,, May 6, 9·1 ,,
1902, June 24, 9·0 ,, [reddish].
The great difference between the photo- and visual-magnitudes implies colour.
Perhaps a long period variable.

No. 41. $8^h\ 8^m\ 16^s$ $-34°\ 12'.1$

See Variable Stars.

No. 42. $8^h\ 13^m\ 19^s$ $-21°\ 50'.8$

Kapteyn :—C.P.D., 9·0 mag.
S.D., *Nil.*
See Introduction to C.P.D., vol. i. p. (87).
Cape :—1900, Jan. 6, 9·2 mag.
,, ,, 27, 9·3 ,,
,, May 6, 9·25 ,,

No. 43. $8^h\ 16^m\ 40^s$ $-21°\ 41'.8$

Kapteyn :—C.P.D., 9·0 mag.
S.D., *Nil.*
See Introduction to C.P.D., vol. i. p. (87).
Cape :—1900, Jan. 6, 9·55 mag.
,, ,, 8, 9·4 ,,
,, ,, 16, 9·6 ,,
,, ,, 27, 9·5 ,,
,, May 6, 9·4 ,,
Almost certainly not variable.

No. 44. $8^h\ 22^m\ 59^s$ $-26°\ 50'.8$

Kapteyn :—Thome, 8·5 mag.
C.P.D., 10·2 ,,
Cape :—1900, Jan. 6, 9·0 mag., colour 6.
,, Feb. 8, 9·1 ,, ,, 6.
The colour of this star, orange, would account for its faintness in the C.P.D.

No. 45. $8^h\ 23^m\ 54^s$ $-30°\ 22'.1$

See Results of Revision, List I. No. 64.

No. 46. $8^h\ 34^m\ 19^s$ $-22°\ 51'.4$

See Results of Revision, List III. No. 9.
Also photographed 21 times on 9 plates between 1895, Dec. 30 and 1896, Apr. 15, mag. on all the plates about 9·0.

No. 47. $8^h\ 40^m\ 14^s$ $-27°\ 44'.8$

See Variable Stars.

No. 48. $8^h\ 41^m\ 5^s$ $-50°\ 6'.5$

Kapteyn :—
C.P.D. Plate, No. 605. 1887, Mar. 19, 9·75 mag.
2026. 1889, Jan. 21, < 9·6 ,,
2603. 1890, Mar. 20, 9·25 ,,
2626. ,, Apr. 5, 9·85 ,,
Cape :—Plates taken here between January and April 1896 indicate a small but certain variation from 9·6 to 10·0 mag.
See *Astr. Nach.*, No. 3426.
Visually :—1899, Feb. 14, 9·0 mag.
,, ,, 17, 9·4 ,, red 6.
,, ,, 26, 9·0 ,,
,, Mar. 19, 9·05 ,,
,, Apr. 23, 9·1 ,,
,, ,, 28, 9·3 ,,
,, May 2, 9·0 ,,
,, ,, 11, 9·1 ,,
,, ,, 13, 9·2 ,,
,, ,, 20, 9·3 ,,
,, ,, 27, 9·4 ,,
,, June 6, 9·4 ,,
,, ,, 11, 9·1 ,,
,, ,, 18, 9·4 ,,
,, ,, 24, 9·4 ,,
,, ,, 30, 9·4 ,,
,, July 12, 9·5 ,,
1900, Jan. 6, 9·0 ,,
,, ,, 16, 9·3 ,, red.
,, ,, 27, 9·3 ,,
Probably variable, but the amplitude is too small to permit the period to be found from visual observations.

No. 49. $8^h\ 59^m\ 35^s$ $-24°\ 35'.5$

See Variable Stars.

No. 50. $9^h\ 6^m\ 50^s$ $-40°\ 47'.1$

Kapteyn :—Plate 40½°, $8^h\ 53^m$ *m.* 9·8 : mag.
,, ,, ,, c. 10·4 : ,,
,, 9 20 10·4 ,,
On the first two plates somewhat near the edge.
Thome's D.M., 10·0 mag.

No. 51. $9^h\ 20^m\ 24^s$ $-30°\ 30'.8$

See Results of Revision, List II. *bis* No. 95.

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No. 52. $9^h\ 28^m\ 41^s$ $-36°\ 3'·8$

Kapteyn:—See Introduction to the C.P.D., vol. i. p. (93), No. 3; and *Astr. Nach.*, No. 3426, No. 3.

Cape:—1897, Mar. 18, 9·2 mag.
,, May 10, 9·2 ,,
,, ,, 22, 9·3 ,,
,, ,, 31, 9·0 ,,
,, June 14, 9·2 ,,
,, July 2, 9·1 ,,
,, ,, 13, 9·0 ,,
,, Dec. 4, 8·9 ,, very good.
,, ,, 17, 8·9 ,,
,, ,, 23, 9·0 ,,
,, ,, 26, 9·3 ,,
1898, Jan. 4, 8·95 ,,
,, ,, 10, 9·0 ,,
,, ,, 14, 8·9 ,,
,, ,, 21, 8·9 ,,
,, Feb. 7, 8·85 ,, white.
,, ,, 14, 9·0 ,,
,, ,, 18, 9·3 ,,
,, ,, 28, 9·35 ,, good.
,, Mar. 3, 9·1 ,,
,, ,, 10, 9·0 ,,
,, ,, 25, 9·3 ,,
,, May 17, 9·2 ,,
,, ,, 21, 9·0 ,,
,, June 15, 9·2 ,,
1899, May 27, 9·0 ,,
1900, Jan. 6, 9·0 ,,

Probably slightly variable; but the variation is too small, and the chance of success too small, to make it needful to continue the observations.

Also photographed 22 times on 7 plates between 1895, Dec. 31, and 1896, Apr. 4. Range of mag. from 8·8 to 9·2.

No. 53. $9^h\ 29^m\ 5^s$ $-24°\ 11'·6$

See Results of Revision, List II. *bis* No. 101.

No. 54. $9^h\ 29^m\ 6^s$ $-62°\ 14'·2$

See Variable Stars.

No. 55. $9^h\ 32^m\ 27^s$ $-27°\ 32'·9$

Kapteyn:—Plate $26\frac{1}{2}°$, $9\frac{3}{4}^h$ 9·6 mag.
,, ,, $9^h\ 22\frac{1}{2}^m$ 9·9 ,,
Probability of variation seems small.

In Thome, 9·6 mag. (at 24^s).

No. 56. $9^h\ 33^m\ 27^s$ $-28°\ 4'·5$

See Results of Revision, List II. *bis* No. 103.

No. 57. $9^h\ 39^m\ 16^s$ $-23°\ 26'·7$

See Variable Stars.

No. 58. $9^h\ 49^m\ 43^s$ $-19°\ 5'·9$

Kapteyn:—
C.P.D. Plate, No. 2342. 1889, May 24, 8·9 mag.
2354. ,, ,, 29, 8·9 ,,
2355. ,, ,, 29, 9·0 ,,
2359. ,, ,, 30, 9·4 ,,
Near edge of plates.

Estimated at Bonn:—
1877, Apr. 14, 9·3 mag.
1880, ,, 11, 9 ,,
See *Astr. Nach.*, No. 2987.

mag.		mag.
Cape:—1899, Feb. 19, 9·35	1899, May 27, 9·0	
,, ,, 26, 9·25	,, June 6, 9·25	
,, Mar. 17, 9·25	,, ,, 25, 9·0	
,, May 11, 9·1	,, July 12, 9·1	
,, ,, 19, 9·05		

Mean: 9·15.

Near a bright star.

The star, B.D. −19°,2863, 9·1 mag. in B.D., is 10·4 mag. in C.P.D. It was always seen = 9·2 or 9·3 mag. during above observations.

No. 59. $9^h\ 59^m\ 0^s$ $-61°\ 33'·1$

Kapteyn:— Lac., $6\frac{1}{2}$ mag.
p, 6–7 ,,
t, 7 ,,
S., 6 ,,
Z.C., 5·5 ,,
U.A. and Madras, 6·9 ,,
C.P.D., 8·5 ,,

There is no "color" recorded in the U.A.

mag. col.		mag. col.
Cape:— 1898, Apr. 2, ... 6	1902, May 6, 7·2	
1902, ,, 13, 7·0 6·5	,, ,, 19, 7·4	
,, ,, 16, 7·7 6·5	,, June 10, 7·0 6	
,, ,, 23, 7·2	,, ,, 23, 7·2 6	
,, ,, 28, 7·2		

Means:—mag. 7·2 colour 6·2

No. 60. $10^h\ 2^m\ 38^s$ $-39°\ 44'·5$

Kapteyn:—

mag.		mag.
C.P.D. Plate, No. 1258. 1888, Apr. 10, 9·1		
1331. ,, May 30, 9·1		
2100. 1889, Feb. 12, 9·25		
2238. ,, Apr. 21, 9·15		
2675. 1890, May 14, 9·25		
2725. ,, June 16, 10·45		

On plate 2725 the image of the star as seen under the microscope is slightly disfigured.

Variability not very probable.

mag.		mag.
Cape:—1899, Feb. 20, 9·3	1899, May 19, 9·0	
,, ,, 27, 9·1	,, ,, 27, 9·05	
,, Mar. 17, 9·2	,, June 6, 9·1	
,, May 11, 9·0	,, ,, 9, 9·1	

Mean: 9·1.

No. 61. $10^h\ 5^m\ 54^s$ $-41°\ 16'·9$

Kapteyn:—

mag.		mag.
C.P.D. Plate, No. 1258. 1888, Apr. 10, 9·35		
1331. ,, May 30, 9·35		
2100. 1889, Feb. 12, 9·3		
2238. ,, Apr. 21, 9·3		
2675. 1890, May 14, 9·25		
2725. ,, June 16, 10·35		

Plate 2725 examined under the microscope. Film and image of the star perfectly normal.

Z.C., 9·5 mag.
Thome, 9·5 ,,

mag.		mag.
Cape:—1899, Feb. 20, 9·4	1899, May 19, 9·3	
,, ,, 27, 9·5	,, ,, 27, 9·45	
,, Mar. 17, 9·3	,, June 6, 9·45	
,, May 11, 9·3	,, ,, 9, 9·5	

Mean: 9·4.

It will be noticed that it was also on plate 2725 that No. 60 was faint, which rather discounts the chances of Algol-variability of these two stars.

No. 62. $10^h\ 10^m\ 35^s$ $-53°\ 51'·5$

See Variable Stars.

No. 63. $10^h\ 13^m\ 25^s$ $-44°\ 37'·0$

Kapteyn:— *g*, 9·2 mag.
Cordoba 1876, Mar. 7, $7\frac{1}{2}$,, (G.)
,, ,, ,, 13, $9\frac{1}{2}$,, ,,
Z.C., $9\frac{1}{2}$,,
C.P.D., 9·3 ,,
Thome, 9·8 ,,
Error in G., or variable?

Cape:—1900, Jan. 6, 9·3 mag.
,, Mar. 7, 9·3 ,,

No. 64. $10^h\ 16^m\ 44^s$ $-41°\ 43'·7$

See Variable Stars.

No. 65. $10^h\ 45^m\ 22^s$ $-27°\ 58'·2$

See Variable Stars.

No. 66. $10^h\ 59^m\ 40^s$ $-20°\ 58'·6$

Kapteyn:—In C.P.D. there is but one star here = 9·3 mag. In S.D. there are two stars—
1875. 9·3 mag. $10^h\ 59^m\ 37^s·3$ −20° 58′·4
,, 9·3 ,, 10 59 39 ·3 −20 58 ·6
The former seems to be the one missing in C.P.D. It was also missed in one of the Bonn Zones.
See *Astr. Nach.*, vol. 133, c. 344.

Cape:—1900, Jan. 6. Both stars seen; *pr.* = 9·5 mag., *f* = 9·3 mag.
1900, Mar. 30, 9·3 and 9·3 mag.
1901, ,, 31, 9·4 mag., good.
,, Apr. 4, 9·3 ,,
,, ,, 7, 9·4 ,,
,, ,, 8, 9·4 ,,
,, ,, 11, 9·4 ,,
,, ,, 13, 9·4 ,,
} *pr.* star.

Prof. Kapteyn was asked to and again looked up the plates and reported:—

"On both the plates there is *one* relatively bright star (9·3), whereas Schönfeld has two stars of nearly equal brightness. On the richer of the plates I find under the microscope faint traces of two other stars, one of which may possibly be that of Schönfeld. It is fainter than 10·0 mag., however, and too faint for the other plate which is poorer. If you find two stars of nearly equal brightness in the sky, one must be either variable or red."

1901, June 8, 9·4 mag. red?
,, ,, 12, 9·5 ,, reddish.
,, ,, 15, 9·4 ,, red 7.
,, July 11, 9·4 ,,
} *pr.* star.
(Both stars always seen.)

No. 67. $11^h\ 5^m\ 26^s$ $-47°\ 9'·9$

Kapteyn:—

mag.		mag.
C.P.D. Plate, No. 1125. 1888, Jan. 20, 8·9		
1176. ,, Mar. 3, 9·0		
1388. ,, June 20, 8·9		
1474. ,, July 19, 8·9		
2704. 1890, June 6, 9·6		
2709. ,, ,, 11, 9·0		

No defect in the film of plates Nos. 2704 and 2709 could be detected under the microscope.

Cape:—Carte du Ciel Plate 1341, 8·8 mag.

Visual:—

mag.		mag.
1899, Feb. 20, 9·1 mag.	1899, June 10, 9·0 mag.	
,, ,, 27, 9·0 ,,	,, ,, 13, 8·9 ,,	
,, Mar. 17, 9·0 ,,	,, ,, 24, 8·9 ,,	
,, May 2, 8·8 ,,	,, July 26, 8·75 ,,	
,, ,, 27, 9·25 ,,	1900, Jan. 6, 9·2 ,,	

C.Z., 9·0 mag.
Cor. DM., 9·2 ,,

No. 68. $11^h\ 8^m\ 56^s$ $-59°\ 22'·3$

Kapteyn:—C.P.D. Plate, No. 409, 9·8 mag.
417, 9·4 ,,
420, 9·9 ,,
428, 9·5 ,,
In no other catalogue.

Cape:—Not in Gould's Cordoba Photographs.

1898, Mar. 25, 9·4 mag., yellow.	
,, ,, 26, 9·5 ,,	red 8.
,, ,, 30, 9·75 ,,	red.
,, Apr. 3, 9·5 ,,	
,, ,, 7, 9·6 ,,	red.
,, ,, 12, 9·6 ,,	
,, ,, 20, 9·7 ,,	
,, ,, 25, 9·4 ,,	red 7.
,, ,, 29, 9·6 ,,	

Note to No. 63 by Dr Ristenpart:—The B.A.C. Lacaille has a star here, No. 4247, but a probable change in Lacaille's originals makes Lacaille's star = G 14086, instead of G 14069. In the Cape 1880 Cat. p. 250, it is stated that no star of the 7^m was found in the place of Lac. 4247.

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Cape:—1898, May 13, 9·7 mag.
,, ,, 15, 9·55 ,,
,, ,, 19, 9·55 ,,
,, June 6, 9·55 ,, red.
,, ,, 15, 9·55 ,, reddish.

Mean, 9·6 ,, red 7·5.

An erroneous observation on 1898 Mar. 17 is omitted.

No. 69. 11h 22m 5s —30° 3′·6

See Results of Revision, List I. No. 80, page 4A *ante*.

No. 70. 11h 40m 5s —35° 14′·8

See Results of Revision, List III. *bis* No. 20, page 57A *ante*.

No. 71. 11h 41m 22s —32° 34′·5

See Variable Stars.

No. 73. 11h 42m 57s —41° 3′·8

See Variable Stars.

No. 74. 11h 48m 48s —58° 33′·5

See Variable Stars.

No. 75. 12h 2m 55s —44° 43′·8

See List in C.P.D., vol. i p. (93), No. 5; and *Astr. Nach.*, No. 3426, col. 285, No. 4.

Cape:—1899, June 9, 8·7 mag.
,, ,, 11, 8·6 ,, red 6.
,, ,, 15, 8·8 ,,
,, ,, 25, 8·9 ,,
,, July 1, 8·5 ,, white o.
,, ,, 12, 8·8 ,,
,, ,, 26, 9·2 ,,
1900, Jan. 18, 8·8 ,,
,, Mar. 16, 9·1 ,,
,, ,, 22, 8·8 ,, orange 5.
,, ,, 27, 8·75 ,,
,, ,, 30, 8·9 ,,
,, ,, 31, 8·7 ,,
,, Apr. 3, 9·1 ,,
,, ,, 16, 9·1 ,,
,, ,, 18, 8·85 ,,
,, ,, 21, 8·95 ,,
,, ,, 28, 8·65 ,,
,, May 3, 8·6 ,,
,, ,, 6, 8·7 ,,
,, ,, 15, 9·05 ,,
,, ,, 20, 8·7 ,,
,, ,, 21, 8·6 ,,
,, ,, 24, 8·9 ,,
,, ,, 27, 8·7 ,,
,, ,, 31, 8·5 ,,
,, June 2, 8·6 ,,
,, ,, 25, 8·6 ,,
,, July 6, 8·6 ,,
,, ,, 24, 8·7 ,,
,, Aug. 1, 8·5 ,,
1901, Apr. 8, 9·1 ,,

The photographic evidence of variability is very strong; the visual range is from 8·5 mag. to 9·2 mag., somewhat greater than the probable errors. Still it is impossible to deduce any period.

No. 76. 12h 11m 11s —21° 15′·6

Kapteyn:—On rejected plates, 9·2 mag.
,, definitive plates, 8·6 ,,

Cape:—We also find—
a., 8·5 mag.
,, 8·0 ,,
S.D., 8·3 ,,
C., 8·5 ,,

No. 77. 12h 19m 41s —28° 45′·4

Kapteyn:—

C.P.D. Plate, No. 1407.	1888, June 30, ...	mag.
1417.	,, July 11, 9·9	,,
1427.	,, ,, 12, 9·9	,,
1435.	,, ,, 13, 9·05	,,
1452.	,, ,, 17, 9·75	,,
1461.	,, ,, 18, 9·9	,,

The images of plate 1407 are much too faint to be of any service. Plate 1435 examined under the microscope; not the slightest defect either of the image or of the film could be detected.

Thome, 9·3 mag.

mag.		mag.
Cape:—1899, June 13, 9·5	1899, July 26, 9·4	
,, ,, 25, 9·4	1900, May 8, 9·35	
,, July 5, 9·4		

Mean: 9·4 mag.

No. 78. 12h 34m 12s —33° 53′·1

See Results of Revision, List II. *bis* No. 157, page 48A *ante*.

No. 79. 12h 36m 32s —33° 0′·0

See Results of Revision, List III. *bis* No. 21, page 57A *ante*.

No. 80. 12h 45m 55s —59° 55′·7

See Results of Revision, List I. No. 654, page 26A *ante*.

No. 81. 13h 9m 17s —44° 2′·6

Kapteyn:—

C.P.D. Plate, No. 1282.	1888, Apr. 26, 9·25	mag.
1476.	,, July 19, 9·25	,,
1519.	,, Aug. 3, 9·25	,,
2734.	1890, June 19, 8·8	,,
2768.	,, July 17, 9·35	,,
2790.	,, Aug. 5, 9·25	,,
2795.	,, ,, 6, 9·25	,,

On plates 2790 and 2795, image slightly nebulous. Plates 2734, 2768, 2790, and 2795 examined under the microscope. No defect of film or image could be detected.

Cape:—
We have:—Lac., 7 mag.
Z.C., 7 ,,
S., 7 ,, red.
G., 7·2 ,, red.
Thome, 7·5 ,, colour.
Visually:—1898, Mar. 2, 7·2 ,, red 7·5.
,, ,, 11, 7·5 ,, ,, 8.
,, Apr. 3, 7·5 ,, ,,
,, ,, 13, 8·0 ,, very red.

A new list of comparison stars was now adopted:—
1898, Apr. 15, 7·3 mag., very red.
,, ,, 20, 7·75 ,, v. v. red.
,, ,, 26, 7·7 ,,
,, ,, 29, 7·8 ,,
,, May 7, 7·4 ,, red.
,, ,, 15, 7·5 ,,
,, ,, 19, 7·5 ,,
,, ,, 27, 7·2 ,,
,, June 1, 7·2 ,,
,, ,, 10, 7·5 ,,
,, ,, 14, 7·5 ,,
,, ,, 18, 7·2 ,,
,, July 18, 7·3 ,,
,, ,, 25, 7·4 ,,
,, Aug. 4, 7·2 ,,
1899, Feb. 2, 7·4 ,, red 8.
,, Mar. 21, 7·75 ,, ,, 8.
,, May 20, 8·1 ,, ,, 8.
,, ,, 21, 7·8 ,, ,, 8.
1899, June 7, 7·85 mag.
1900, July 6, 7·1 ,, red.

Mean, 7·45 ,, redness 7·9.
Range, 7·1 ,, to 8·1 mag.

Still it cannot be said that the star is certainly variable, as the estimates of magnitude are liable to somewhat large errors on account of the redness of the star.

In reference to Kapteyn's remark that the star appears nebulous (marked accordingly × in C.P.D.), this is not apparent visually. On the Carte du Ciel plates the images of very red stars are frequently nebulous, due to difference of focus.

On. 4 *C. du C.* plates taken in 1896 there is no sufficient evidence of variability.

No. 82. 13h 11m 37s —73° 47′·0

Kapteyn:—Z.C., 8½ mag.
g, 8 ,,

This star is very faint on *c.*; certainly missing on *m.*, which is somewhat poorer. Variable or red.

Cape 1899, July 22:—8·0 mag., orange-red 6.

No. 83. 13h 17m 48s —32° 47′·8

Kapteyn:—W.Z., 1849, Feb. 13, 9 mag.
Z.C., 1873, June 17, 7½ ,,
G., 1880, July 9, 9 ,,
Thome, 7·5 ,,
C.P.D., 1888, Aug. 18, 8·7 ,,

On three plates, Nos. 1358, 1418, and 1514, magnitude the same.

Cape:—1899, Sept. 24, 8·3 ± mag.
1900, Apr. 18, 8·3 ,,
May 8, 8·1 ,,

Mean, 8·25 ,,

No. 84. 13h 34m 36s —32° 57′·8

See Variable Stars.

No. 85. 13h 41m 2s —36° 14′·2

See Variable Stars.

No. 86. 13h 44m 5s —36° 19′·3

See Variable Stars.

No. 87. 13h 47m 39s —42° 37′·4

Kapteyn:— mag.

C.P.D. Plate, No. 1283.	1888, Apr. 26, <	9·2
1319.	,, May 8, <	8·5
1372.	,, June 18, <	9·0
2765.	1890, July 17,	9·45
2800.	,, Aug. 13,	10·05

Plates 2765 and 2800 examined under the microscope. Both films and star-images perfectly normal.

Thome, 10·0 mag.

mag.		mag.
Cape:—1899, June 13, 9·7	1899, Sept. 2, 10·1	
,, ,, 25, 10·0	,, ,, 24, 10·3	
,, July 5, 9·8	1900, Apr. 18, 10·0	

Mean: 10·0 mag.

The visual observations do not prove inconstancy of light.

This star has been looked up on 6 *C. du C.* plates and the mag. found to be on all between 9·7 and 10·0. In Thome = 10 mag.

No. 88. 13h 50m 41s —64° 55′·9

Kapteyn:—C.P.D., 7·9 mag.
Cordoba, 1873, Apr. 30, 9½ mag. Z.C.

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Cordoba, 1876, June 3, 7 mag.
,, ,, 5, 7½ ,,
,, ,, 6, 7 ,,
,, ,, 8, 7½ ,,
Cape :—1899, Sept. 18, 7·7 mag.
,, ,, 24, 7·5 ,, colour = 1.
,, ,, 26, 7·5 ,,
1900, Jan. 23, 7·8 ,,
,, Mar. 8, 7·9 ,, white = 0.
,, Apr. 18, 8·0 ,,

This star was always within the limits of mag. of the two comparison stars, viz., 7·0 and 8·1.

No. 89. 13h 53m 6s —38° 4′·6

Kapteyn :— mag.
C.P.D. Plate, No. 1335. 1888, May 30, <9·3
1391. ,, June 20, <9·1
1467. ,, July 18, 9·3
2765. 1890, ,, 17, 9·35
2800. ,, Aug. 13, 9·75

Plates 2765 and 2800 examined under the microscope. No defect either in the films or star-images could be detected.

	mag.		mag.
Cape :—1899, June 15,	9·4±	1899, Sept. 26,	[9·2]
,, ,, 25,	9·3	1900, Mar. 31,	8·9
,, July 5,	9·4	,, Apr. 18,	8·95
,, Sept. 2,	9 3		

Mean : 9·2 mag.

This star has a comes = 11·5 mag. *S.f.* 20″.

It will be noticed that it is also on plate 2800 that No. 87 is reduced in magnitude. See a similar pair in Nos. 60 and 61.

No. 90. 14h 4m 22s —28° 17′·6

See Variable Stars.

No. 91. 14h 16m 40s —44° 2′·0

Kapteyn :—C.P.D., 10·2 mag. Hardly visible on Carte du Ciel plates, which contain other far fainter stars.
Cape :—Carte du Ciel Plate 3689, 10·3 mag
4900, 10·3 ,,

The star used for comparison is about 7′ *S.f.*, and is very nearly the same magnitude.

Not in Thome's Cor. DM.

No. 92. 14h 18m 40s —29° 43′·2

Kapteyn :— Z.C., 1873, July 6, 7½ mag.
G., 1880, June 19, 9 ,,
a, 8·5 ,,
C.P.D., 8·3 ,,
Thome, 7·8 ,,
Cape :—1899, Sept. 23, 8·5 mag.
1900, Mar. 31, 8·0 ,,
,, Apr. 18, 7·8 ,, yellow 4.
,, ,, 28, 8·3 ,, ,, 3.
,, May 8, 8·15 ,,
,, ,, 27, 8·1 ,,

Mean, 8·1 ,, colour 3·5.

No. 93. 14h 28m 31s —34° 21′·5

Kapteyn :— Lac., 7 mag.
W.Z., 8 ,,
Z.C., 9·5 ,,
G., 7·5 ,,
S., 7 ,,
Thome, 7·7 ,,
C.P.D., 8·5 ,,
Variable, or error in Z.C. ?
Cape :—1899, Sept. 23, 7·9 mag.
,, ,, 26, 7·9 ,, yellow 5.
1900, Mar. 30, 7·5 ,, orange 5.
,, Apr. 18, 7·5 ,, ,, 5.

Mean, 7·7 ,, colour = 5.

No. 94. 14h 28m 54s —24° 2′·3

Kapteyn :—
C.P.D. Plate 21½°, 14½h *m.*, 10·0 : mag.
,, ,, *c.*, 9·2 : ,,
,, 14⅔ 8·2 ,,
,, 14h 37½m, 8·4 ,,

On the two first plates very near the corner, therefore uncertain.
Cape :—Thome, 8·2 mag.
G., 8·2 ,,
Z.C., 8·5 ,,
O.A., 8·0 ,,

No. 95. 14h 58m 34s —34° 26′·0

See Results of Revision, List II. *bis* No. 197, page 50A *ante*.

No. 96. 15h 2m 22s —69° 36′·3

Kapteyn :—
C.P.D. Plate, No. 68. 1885, June 24, 9·25 mag.
77. ,, ,, 30, 9·25 ,,
2366. 1889, ,, 2, 8·85. ,,
2371. ,, ,, 4, 8·8 ,,
U.A., 6·2 mag., red.
Z.C., 6 ,,
G., 6·2 ,, red var. ?
Cape :—Lac., 6·0 ,,
S., 6·0 ,, red.
S.M.P., 5·3 ,,

The range in the S.M.P. is from 4·9 to 5·7 mag. (7 obs. over 413 days). This star has a spectrum of the fourth type. Perhaps slightly variable. Suitable for observation with an opera glass.

No. 97. 15h 13m 14s —75° 28′·9

Kapteyn :— *m.*, 10·0 mag.
c., 9·7 ,,
Difference very evident.
Z.C., 8·5 mag.
G., 8·8 ,, red.
g, 8·5 mag. (2 obs.)
Cape :—1899, Sept. 23, 8·7 mag., red 8·5.
1900, Mar. 31, 8·7 ,, ,, 7.

The probable error of photographic magnitudes, as well as of visual magnitudes, is greater in red stars than in white stars.

No. 98. 15h 18m 7s —37° 42′·8

See Results of Revision, List III. *bis* No. 26, page 58A *ante*.

No. 99. 15h 20m 59s —60° 27′·3

Kapteyn :—*c.*, 8·8 mag.
m., 9·2 ,,
Cape :—1899, Sept. 20, 9·2 mag.
,, ,, 26, 9·25 ,,
,, Oct. 10, 9·3 ,,
1900, Feb. 12, 9·3 ,,

No. 100. 15h 24m 55s —68° 49′·4

Kapteyn :—
C.P.D. Plate, No. 2366, 9·3 mag.
2371, 9·8 ,,
Does this star exist ?

On rejected plates 15h 0m, Nos. 68 and 77 certainly missing, and therefore < 9·6 mag. On plates 15h 45m, Nos. 111 and 442 doubtful traces ; if the star exists, then 9·7 at best.
Cape :—1899, Sept. 18, 9·6 mag.
,, ,, 26, 10 ± ,,
,, Oct. 6, [9·9] ,,
1900, Apr. 18, 9·9 ,,

No. 101. 15h 26m 3s —59° 38′·0

Kapteyn :— *m.*, 9·8 mag.
c., 9·5 ,,
C.P.D. Plate, No. 99, 9·5 ,,
102, 9·8 ,,
445, 9·5 ,,
448, 9·5 ,,

The differences, though small, seem hardly doubtful.

	mag.		mag.
Cape :—1897, Apr. 26,	9·2	1897, Sept. 2,	9·4
,, June 30,	9·0	,, ,, 17,	9·2
,, Aug. 12,	9·35	,, Oct. 3,	9·3

Mean : 9·25 mag.

No. 102. 15h 26m 58s —49° 5′·2

See Variable Stars.

No. 103. 15h 32m 9s —22° 46′·8

Kapteyn :—
C.P.D. Plate, No. 1589. 1888, Aug. 22, 9·6 mag.
1646. ,, Sept. 18, 10·05 ,,
1657. ,, ,, 22, 10·05 ,,

Plate 1589 examined under the microscope. This star's image seems to be more sharply defined than that of other stars.

S.D., *Nil.*
Thome, 9·7 mag.

	mag.		mag.
Cape :—1899, June 15,	9·7	1899, Sept. 2,	9·7
,, ,, 18,	9·6	,, ,, 26,	9·95
,, ,, 19,	9·8	,, ,, 27,	9·8

Mean : 9·8 mag.

No. 104. 15h 32m 42s —54° 54′·4

See Variable Stars.

No. 105. 15h 52m 24s —57° 56′·4

Kapteyn :—C.P.D. Plate 60°, 16½h, 10·0 mag.
,, ,, 55½ 16 <10·4 ,,
Not admitted into the C.P.D.
Cape :—1899, Sept. 18, <10 mag., hazy.
,, ,, 26, inv.
,, Oct. 1, inv.
1900, Mar. 31, No star.

In a most difficult region to identify, as it is crowded with faint stars.

No. 106. 15h 52m 56s —29° 33′·9

See Variable Stars.

No. 107. 15h 57m 8s —23° 45′·2

See Variable Stars.

No. 108. 16h 7m 11s —62° 25′·3

Kapteyn :—C.P.D. Plate 65°, 16h, 9·3 mag.
,, ,, 60 16⅓ 9·8 ,,

	mag.		mag.
Cape :—1899, Sept. 23,	9·4	1899, Nov 7,	9·3
,, ,, 26,	9·25	1900, Jan. 23,	9·25
,, Oct. 6,	9·6	,, May 29,	9·65
,, ,, 10,	9·85	,, June 8,	9·6
,, ,, 14,	9·35	,, ,, 20,	9·3
,, ,, 18,	9·5	,, July 6,	9·4
,, ,, 22,	9·4	,, ,, 24,	9·4

No. 109. 16h 28m 39s —30° 58′·5

See Variable Stars.

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No. 110. $16^h\ 32^m\ 36^s$ $-32°\ 7'·9$

See Results of Revision, List I. No. 150, page 7A *ante*.

No. 111. $16^h\ 41^m\ 43^s$ $-19°\ 14'·3$

See Variable Stars.

No. 112. $16^h\ 45^m\ 51^s$ $-66°\ 50'·5$

Kapteyn :—C.P.D., 8·7 mag.
Z.C., 1873, June 29, 8½ ,,
,, ,, July 11, 8 ,,
G., 1880, Aug. 7, 10¼ ,,
Cape :—1899, Sept. 20, 8·5 mag., very good.
,, ,, 26, 8·55 ,,
1900, May 27, 8·5 ,,

No. 113. $16^h\ 46^m\ 34^s$ $-44°\ 53'·7$

See Variable Stars.

No. 114. $16^h\ 48^m\ 40^s$ $-30°\ 22'·6$

See Variable Stars.

No. 115. $16^h\ 50^m\ 30^s$ $-56°\ 17'·2$

Kapteyn :—*m.* and *c.*, 8·8 mag.
Cordoba, 1873, June 26, 8 ,,
,, ,, Aug. 5, 8 ,,
,, 1875, July 24, 7½ ,,
,, 1880, Aug. 2, 9¼ ,,
,, ,, ,, 7, 10 ,,

	mag.	col.
Cape :—1897, July	1,	8·5
,, Aug.	31,	8·7 8
,, Sept.	5,	8·7 7·5.
,,	,, 17,	8·6 4
,,	,, 24,	8·7
,, Oct.	19,	8·4 5
,,	,, 23,	8·7 4
1898, May	16,	8·5 6
,, June	1,	8·4 7
1899, Sept.	20,	8·3
,, Oct.	6,	8·5
1900, Sept.	1,	8·6 5
,, Oct.	15,	8·6 5
1901, Feb.	15,	8·2
,, Mar.	10,	8·3

Mean, 8·5 mag. colour 6.

No. 116. $16^h\ 53^m\ 34^s$ $-24°\ 41'·4$

See Results of Revision, List II. *bis* No. 231, page 52A *ante*.

No. 117. $17^h\ 0^m\ 16^s$ $-59°\ 55'·4$

Kapteyn :—*m.*, 9·7 mag.
c., 9·4 ,,
On third plate missing, owing probably to a defect in the film.
Cordoba, 9·5 mag.
9·5 ,,
7·5 ,,
8·5 ,,
Cape :—1899, Sept. 20, 9·0 mag.
,, Oct. 6, 8·95 ,,
1900, July 6, 9·1 ,,
,, Aug. 20, 9·0 ,,

No. 118. $17^h\ 18^m\ 53^s$ $-30°\ 58'·9$

Kapteyn :—C.P.D., 10·2 mag.
W.Z., 8 ,,
,, 8 ,,
Thome, 8·7 ,,
Cape :—1900, Oct. 26, 8·7 mag.
,, Nov. 6, 8·5 ,, red.
1901, July 27, 8·5 ,, ,, 8.

No. 119. $17^h\ 27^m\ 56^s$ $-33°\ 24'·6$

Kapteyn :—C.P.D., 10·2 mag.
Z.C., 8·5 ,,
Thome, 8·7 ,,
Red or variable ?
Cape :—1899, Sept. 19, 8·7 mag., red 8·5, is *S.pr.* an 8·9 mag. star.
,, ,, 24, 8·7 ,, ,, 9·
,, Oct. 28, 8·7 ,,
1900, Mar. 23, 8·7 ,, red 8.

No. 120. $17^h\ 39^m\ 54^s$ $-35°\ 29'·3$

Kapteyn :—C.P.D. 8·6 mag.
In Thome's list of suspected variables :—
1889, July 15, Not seen.
1890, Sept. 4, ,, ,,
1892, ,, 12, 8·5 mag.
Also Meridian Observations at Cape in 1884, viz., Cape 1885, No. 1248 (2 obs.), 8·0 mag.
See also Chandler's IIIrd Catalogue of Variable Stars. p. 172, col. 2 ; Suspected Variables in the *Cordoba Durchmusterung*, and *Astr. Nach.*, vol. 110, c. 203.

	mag.		mag.
Cape :—1898, June	6, 8·7 A.	1898, Sept.	30, 8·6
,,	,, 22, 8·9	,, Oct.	8, 8·7
,, July	9, 8·9	,,	,, 17, 8·7
,,	,, 18, 8·8 B.	,,	,, 24, 8·6
,,	,, 20, 8·8	1899, Apr.	23, 8·7
,,	,, 25, 8·8	,, June	6, 8·6
,, Aug.	4, 8·75	1900, Sept.	18, 8·7
,, Sept.	5, 8·6		

A :—Thome's stars about here very loose in mag. and position.
B :—In nebulous sky.
The Cape Observations do not give the slightest indication of variability. Plates Nos. 4962 and 4967 (1898 Aug. 10-11) give 8·7 mag.

No. 121. $17^h\ 49^m\ 32^s$ $-49°\ 24'·9$

See Variable Stars.

No. 122. $17^h\ 51^m\ 59^s$ $-37°\ 41'·3$

See Results of Revision, List III. *bis* No. 66, and last note to that list, page 58A *ante*.

No. 123. $17^h\ 53^m\ 32^s$ $-26°\ 17'·0$

Kapteyn :—
C.P.D. Plate, No. 1695. 1888, Oct. 3, 9·5 mag.
1703. ,, ,, 4, 10·4 ,,
Plate 1703 examined under the microscope. Image of the star deformed, though no defect in the film can be seen. Variability not very probable.
a., 9 mag.
Z.C., 9·5 ,,
Thome, 8·6 ,,
Cape :— 1899, June 15, 8·75 mag., orange 6.
,, ,, 18, 8·8 ,,
,, ,, 24, 8·85 ,, yellow 5.
,, ,, 30, 8·8 ,,
,, July 27, 8·75 ,,
,, Sept. 5, 8·8 ,,

Mean, 8·8 ,, colour 5½.

No. 124. $17^h\ 54^m\ 36^s$ $-25°\ 19'·0$

See Results of Revision, List II. *bis* No. 240, page 52A *ante*.

No. 125. $18^h\ 0^m\ 52^s$ $-63°\ 38'·2$

See Variable Stars.

No. 126. $18^h\ 44^m\ 23^s$ $-31°\ 7'·9$

Kapteyn :— W.Z., 8·0 mag.
Yarnall, 7·0 ,, (2 obs.)
Z.C., 1873, Sept. 13, 8·5 ,,
G., 1877, ,, 24, 7·0 ,,
Thome, 8·4 ,,
C.P.D., 8·4 ,,
Cape :—1899, Sept. 19, 7·9 ± mag.
,, ,, 20, 8·0 ,,
,, Oct. 22, 8·4 ,,
1900, July 6, 8·4 ,,

No. 127. $18^h\ 46^m\ 34^s$ $-31°\ 15'·3$

Kapteyn :—
C.P.D. Plate, No. 1779. 1888, Nov. 1, 9·7 mag.
1788. ,, ,, 5, 9·35 ,,
Both plates examined under the microscope. No defects in the films or images could be detected.
Cape :—1899, June 15, 9·5 mag.
,, ,, 24, 9·5 ,,
,, ,, 30, 9·3 ,,
,, July 12, 9·5 ,,
,, Sept. 19, 9·5 ,,
,, Oct. 22, 9·3 ,,
1900, July 6, 9·4 ,,

No. 128. $19^h\ 8^m\ 23^s$ $-33°\ 44'·3$

See Variable Stars.

No. 129. $19^h\ 36^m\ 39^s$ $-72°\ 4'·5$

See Variable Stars.

No. 130. $19^h\ 40^m\ 57^s$ $-20°\ 59'·6$

Kapteyn :—
C.P.D. Plate, No. 1832. 1888, Nov. 21, 9·4 mag.
1837. ,, ,, 22, 8·4 ,,
Both plates examined under the microscope. No defect either in the films or images could be detected.
Lamont, 1847·6 8 mag.
Argelander, 1849, Sept. 8, 9 ,,
S.D., 8·6 ,,
Cinc., 8·7 ,,
Cape :—1899, June 15, 8·6 mag.
,, ,, 22, 8·0 ,,
,, ,, 25, 8·3 ,,
,, Oct. 3, 8·8 ,,
,, ,, 13, 8·7 ,, red 7.
,, ,, 22, 8·7 ,,
,, ,, 25, 8·8 ,,
,, Nov. 3, 8·5 ,,
,, ,, 7, 8·5 ,,
,, ,, 10, 8·6 ,,
,, ,, 17, 8·75 ,,
,, ,, 23, 8·7 ,,
,, ,, 27, [8·7] ,,
1900, Feb. 1, 8·65 ,,
,, Mar. 26, 8·2 ,, red 5.
,, May 16, 8·4 ,, ,, 4.
The colour is probably accountable for the range in magnitude both visually and photographically.
See for another example No. 97, page 12B *ante*.

No. 131. $19^h\ 56^m\ 25^s$ $-55°\ 54'·2$

See Variable Stars.

No. 132. $20^h\ 0^m\ 5^s$ $-31°\ 5'·7$

See Results of Revision, List II. *bis* No. 253, page 53A *ante*.

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No. 133. $20^h\ 8^m\ 43^s$ $-23°\ 51'·9$

See Results of Revision, List III. *bis* No. 74, page 58A *ante*.

No. 134. $20^h\ 25^m\ 16^s$ $-22°\ 6'·7$

See Variable Stars.

No. 135. $20^h\ 26^m\ 28^s$ $-30°\ 5'·5$

See Results of Revision, List II. *bis* No. 261, page 53A *ante*.
To these the following observations may be added :—

mag.		mag.
1900, July 6,	9·2	1900, Aug. 14, 9·2
,, ,, 24,	9·2	,, ,, 20, 9·2
,, Aug. 1,	9·2	,, Sept. 1, 9·2
,, ,, 4,	9·2	,, ,, 7, 9·1
,, ,, 8,	9·2	,, Nov. 26, 9·2

No. 136. $20^h\ 40^m\ 18^s$ $-44°\ 26'·5$

Kapteyn :—In *p*, 6 mag.
,, *t*, 8 ,,
Cape, 1850, $6\frac{1}{2}$,,
Cordoba, 1872, Oct. 11, $8\frac{1}{2}$,,
1873, Aug. 4, 8 ,,
1879, Sept. 29, 8 ,,
,, ,, 30, $7\frac{3}{4}$,,
1880, ,, 11, 9 ,,
Th. DM., 8·2 ,,
C.P.D., 7·5 ,,
Cape :—1899, Sept. 19, 8·5 mag.
,, Nov. 11, 8·0 ,,
,, Dec. 4, 8·0 ± ,,
Is only about 3′ or 4′ from a 5th mag. star.

No. 137. $20^h\ 43^m\ 30^s$ $-83°\ 47'·3$

Kapteyn :— In *g*, 10 mag.
G., 1876, Sept. 1, 8 ,,
,, ,, ,, 2, 10 ,,
C.P.D. Plate 85°, 20^h, 9·2 ,,
22 9·0 ,,
Gould identifies this with Lac. 8460. This supposes some error in the position of Lacaille. If the identification is correct, the star must be variable.
In Cape 1880 the footnote says: "No 7th mag. star visible near R.A. $20^h\ 45^m$ $-84°\ 2'$ in 1874, or on 1878, Sept. 27."
Cape :—The S.M.P. gives 9·31 mag. from three accordant observations. Gould, in *Astr. Journ.*, No. 219, says: "I cannot explain (Lacaille's) observation, etc."

No. 138. $20^h\ 47^m\ 7^s$ $-54°\ 47'·9$

See Variable Stars.

No. 139. $20^h\ 54^m\ 54^s$ $-27°\ 34'·8$

See Variable Stars.

No. 140. $20^h\ 59^m\ 53^s$ $-31°\ 37'·4$

See Results of Revision, List II. *bis* No. 263, page 53A *ante*.

No. 141. $21^h\ 19^m\ 19^s$ $-30°\ 23'·4$

See Variable Stars.

No. 142. $21^h\ 45^m\ 47^s$ $-54°\ 59'·5$

See Results of Revision, List I. No. 932, page 35A *ante*.

No. 143. $22^h\ 9^m\ 32^s$ $-50°\ 31'·4$

Kapteyn :— S., 7·3 mag.
C.P.D., 9·8 ,,
Cape :—Carte du Ciel Plate, No. 738, 10·2 mag.
1959, 9·8 ,,
2156, 10·2 ,,
3198, 10·2 ,,
Visually :—1899, Sept. 19, 9·3 ,,
,, Nov. 11, 9·5 ,,
,, ,, ,, 9·5 ,,
(Observed twice inadvertently.)
1900, Jan. 6, 9·4 ,,

No. 144. $22^h\ 10^m\ 53^s$ $-30°\ 13'·7$

See Variable Stars.

No. 145. $22^h\ 58^m\ 31^s$ $-37°\ 13'·9$

See Results of Revision, List II. *bis* No. 301, page 55A *ante*.

General Remark by Professor Kapteyn—The magnitudes on different plates have been reduced in every case to a uniform scale.

In the case of the Carte du Ciel plates the magnitudes have been carefully estimated at the Cape.

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RESULTS OF OBSERVATIONS OF VARIABLE STARS.

THE following pages contain full particulars of the variable stars observed here between 1896 and 1902. All the Cape visual observations have been made by myself, with perhaps one or two exceptions, with either the 7-inch Merz equatorial refractor, or with the finder of that instrument. A large number of the new variables were discovered as a result of Prof. Kapteyn's work on the C.P.D. In several cases Prof. Kapteyn was able to announce the star as certainly variable from the plates, but as full detail is given with every star, there will be no difficulty in seeing how each discovery was effected. It is easy to suspect a star of variability—as witness the long lists published by the Cordoba Observatory in the introductions to each volume of its Durchmusterung—but the proof is a different matter, and becomes, in the cases of many stars, very onerous. Nothing would have been easier than to have labelled all the lists of stars missing in the C.P.D.as "Suspected Variables," and left others to find the reasons for discordances. These remarks seem necessary, as the credit of discovery is not always correctly assigned.

In this regard, mention has already been made of the star C.Z. XV. 3719, on page 6 of the preface to Part I. of this volume. If the observer had been content with four months' observation in 1896, or five months' in 1897, it would have been said that this star is not variable, and its absence from the C.P.D., as in the case of still many other stars, would have been inexplicable. It might therefore be suggested that the ordinary formula "Suspected by . . . . . , confirmed by . . . . . ," should be replaced by "Found by . . . . . , previously suspected by . . . . . ."

The remarks on this subject by Prof. E. C. Pickering in the *Harvard Circular*, No. 7, seem perfectly correct.

In the cases of the variable stars which have been visually observed here, maps of the regions are given. The comparison stars have their magnitudes added. In nearly every case, these comparison stars are in the same field as the variable star as seen in the 7-inch telescope. This is a great advantage. The variable could be compared easily and rapidly with several neighbouring stars, and the resulting magnitude alone is entered in the observing book. Perhaps a slight gain in accuracy, at the cost of much time both at the telescope and the desk next morning, would have been secured by the use of Argelander's method, but it did not seem desirable, nor do I recommend it except in special cases. A reference to the magnitude curve of S Aræ will show with what exactitude measures can be made in the simple manner advocated. The variation of this star is small—less than one magnitude according to the comparison stars used here—yet

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on but one occasion is there a certain error exceeding 0·2 mag. The writer believes that if this method of observing variable stars was adopted, one observer could easily keep *all* the southern variable stars under continuous observation. The maps should not be larger than twice the field of the telescope used. It is only with variables which attain considerable brightness that a larger field becomes necessary, and the criterion would still hold good if a smaller telescope is used for the bright variables. Thus the variable star 2935 R S Puppis is not suited for observation with so large a telescope as the 7-inch refractor.

The fainter comparison stars (mags. 10 to 12) have not had their magnitudes determined on any system, beyond the assumption that 12·0 mag. or 12·5 mag. is the limit of vision with the 7-inch. It will also be found that 10 mag. on one map may not be the equivalent of 10 mag. on another. But there is no practical evil; if the scale of magnitudes on any map is altered, it will be easy to apply corresponding corrections to the observations.

The positions of all the variable stars are approximately correct, or, in other words, they have been carefully identified; in a few cases the positions were determined differentially with the equatorial, or taken from recent Cape Transit Circle results.

The maps are not artistic, nor were they meant to be so; they are simply copies of the working maps used here. Generally the variable star is some distance from the centre of the map. The most useful stars for identifying and comparing the variable are seldom situated symmetrically around it, and the area of the maps should have had to be increased (considerably in some cases), if the variable was to occupy the centre and yet retain all the useful stars. Care was taken to arrange that no conspicuous stars are just outside the edges of any of the maps.

An endeavour has been made to give all the published data in connection with each variable star, or, at least, to give full references to places where such may be found. The observations made here are given in full.* The epochs of maximum or minimum, period, etc. of the variable have then been derived from the printed record, so that it is open to anyone, who considers that another interpretation can be given to the observations, to work up the results in his own way.

The stars are arranged according to Right Ascensions. The table on pp. 18B and 19B gives a summary of the results, and will also serve as an index.

R. T. A. INNES.

ROYAL OBSERVATORY,
CAPE OF GOOD HOPE,
18th Aug. 1902.

* In one or two cases where observations had recently have given data for a determination of maximum, the latter is alone given on account of lack of space.

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TABLE OF THE RESULTS OF OBSERVATIONS

OF

VARIABLE STARS AT THE CAPE OF GOOD HOPE.

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TABLE OF THE RESULTS OF OBSERVATIONS OF VARIABLE STARS AT THE CAPE OF GOOD HOPE.

No.	Star.	1900. R.A.	1900. Dec.	1875. R.A.	1875. Dec.	Redness.	Magnitude. Max.	Magnitude. Min.	M-m.	Elements of Maximum, G.M.T.	Basis of Elements. M.	Basis of Elements. m.	Basis of Elements. Years.
		h m s	° ′	h m s	° ′								
110	S Tucanæ	0 18 23	−62 13·7	0 17 11	−62 22·0	(4)	8·5–9·2	11·0–<12·5		1900, June 19. J.D. 2415190+239^d·4 E.	8		1886,89,90,92, 94, 99, 1900.
146	T Sculptoris	0 24 17	−38 27·7	0 23 3	−38 36·0	6	7·9–8·6	<12·5		,, ,, 23. J.D. 2415194+205·5 E.	8		1872, 80, 89, 95, 97, 98, 99–1901.
147	RR Sculptoris	0 24 32	−38 36·5	0 23 18	−38 44·7		[9]	[11·5]					
869	R Fornacis	2 24 47	−26 32·3	2 23 40	−26 39·2	9·0	8·5–9·1	11·8	140^d?	,, May 10. J.D. 2415150+385·0 E.	5	1	1887, 91, 96–97, 1900.
885	X Eridani	2 27 26	−41 54·1	2 26 27	−42 0·8		[9·5]	[11·5]		,, Jan. 4. J.D. 2415024+260·0 E.	3		1892–1902.
1023	R Horologii	2 50 33	−50 17·9	2 49 43	−50 24·0	5 to 8	5·8	10·3	141^d?	,, June 19. J.D. 2415190+395·0 E.	3	2	1889, 99, 1900.
1066	T Horologii	2 57 40	−51 2·2	2 56 52	−51 8·2	4·1	7·7–8·3	[11·5–12·0]	113^d	,, ,, 24. J.D. 2415195+218·4 E.	6	3	1872, 87, 98–99.
1232	T Fornacis	3 25 25	−28 44·8	3 24 23	−28 50·0	(5)	8·5	9·7	42^d?	1902, Mar. 1. J.D. 2415810+ 92·0 E.	1	2	1901–02.
1701	R Pictoris	4 43 29	−49 25·6	4 42 49	−49 28·3	6·5	6·5–6·9	8·2–9·1	49^d	1900, Jan. 10. J.D. 2415030+168·4 E.	2	5	1892-4, 1901-02
1752	U Leporis	4 52 0	−21 22·4	4 50 56	−21 24·9	(4)	9·05	9·95	4^h·0	,, ,, 0·3. J.D. 2415020·3+0·58144 [E.	18	13	1899–1901.
1803	T Leporis	5 0 35	−22 2·4	4 59 31	−22 4·4	7·8	7·7–8·3	<11·5		,, Nov. 19. J.D. 2415343+366·5 E.	9	(3)	1886, 89–1899.
1850	S Pictoris	5 8 18	−48 37·7	5 7 38	−48 39·6	6·0–7·8	8·0	<12·5		,, Sept. 22. J.D. 2415285+428·0 E.	5		1887, 90, 94, 99, 1900.
2565	R Volantis	7 7 26	−72 51·3	7 7 53	−72 48·9	8·9	8·3–9·0	12	230^d?	,, Aug. 13. J.D. 2415245+421·0 E.	3		1851, 99, 1900.
2583	L_2 Puppis	7 10 29	−44 28·6	7 9 44	−44 26·2								
2690	Z Puppis	7 28 18	−20 26·7	7 27 12	−20 23·5	6·8	8·0	<11·5		1901, May 27. J.D. 2415532+523·7 E.	3		1798, 1897, 99.
2691*a*	X Puppis	7 28 26	−20 41·8	7 27 21	−20 38·7	4·0–7·2	8·0	9·0	5·2^d	1900, Jan. 23. J.D. 2415043·5+25·948 [E.	14	13	1880, 83–4, 89, 96–97, 1900.
2709	S Volantis	7 31 30	−73 9·8	7 31 54	−73 6·6	6·1	8·9–9·1	<11·8		,, ,, 22. J.D. 2415042+393·5 E.	4		1874, 89, 1900, 1901.
2781	RR Puppis	7 43 32	−41 7·7	7 42 41	−41 4·0	(0)	9·45	10·7	Algol type	,, ,, 1, 20^h 37^m+6^d 10^h 18^m 58^s·2 [E. (Min.)		9	1890, 99–1900.
2935	RS Puppis	8 9 14	−34 16·6	8 8 16	−34 12·2	6·1	6·8	7·9	13^d	,, ,, 30·6. J.D. 2415050·6+41^d· [313 E.	9	9	1849, 1897–98, 1900.
3128	R Pyxidis	8 41 17	−27 50·2	8 40 14	−27 44·8								
3244	S Pyxidis	9 0 41	−24 41·4	8 59 35	−24 35·5	(0)	8·2	<12·0		,, Mar. 1. J.D. 2415080+208 E.	5		1874, 87, 91, 96–7.
3394	Y Velorum	9 25 40	−51 44·6	9 24 50	−51 38·1	6·3	8·6–9·0	<12·0		1901, ,, 11. J.D. 2415455+437 E.	4		1890, 95, 1901, 1902.
3418*b*	R Carinæ	9 29 44	−62 20·8	9 29 6	−62 14·2								
3482	RR Hydræ	9 40 25	−23 33·5	9 39 16	−23 26·7	3·8	8·4–8·8	<13·0		1900, June 17. J.D. 2415188+336·8^d E.	5		1889, 97–1901.
3536	Z Velorum	9 49 25	−53 42·5	9 48 33	−53 35·5	7	8·9	12·5		,, Jan. 30. J.D. 2415050+407 E.	4		1873, 1900-2.
3573	RV Carinæ	9 55 33	−63 25·0	9 54 50	−63 17·9		9·4–9·7	<13·0		,, May 8. J.D. 2415148+370·0 E.	4		1886, 1899–1901.
3669	W Velorum	10 11 30	−53 58·9	10 10 35	−53 51·5	7·5	8·2–8·4	<12·0		,, Jan. 25. J.D. 2415045+390·5 E.	5		1887, 90, 1899–1901.
3706	RR Velorum	10 17 48	−41 51·3	10 16 44	−41 43·8		10·1	10·9	Algol type	1901, June 12, 5^h 11^m+1^d 20^h 30^m 2^s·9 E. [(Min.)		9	1890, 1900-01.
3847	η Argus	10 41 11	−59 9·5	10 40 13	−59 1·7								
3879	RS Hydræ	10 46 33	−28 6·1	10 45 22	−27 58·2	3·3	8·3	12·0?		1886, Mar. 4. J.D. 2409970+338·0 E. [+40^d sin E × 12°.	6		1886, 88, 97–1900.
4055	RY Carinæ	11 15 49	−61 19	11 14 44	−61 10		9·8	<13·0		1901, June 13. J.D. 2415549. Nova?	1		1901.
4057	RS Centauri	11 16 6	−61 19·6	11 15 1	−61 11·3	6·4	7·9–8·7	12·0–13·0?	70^d?	1900, Jan. 10. J.D. 2415030+164 E.	10		1898–1902.
4216	Z Hydræ	11 42 37	−32 43	11 41 22	−32 34	5·7	8·75	9·75	Irregular	,, Feb. 3. J.D. 2415054+61 E+10^d [× sin (15°+E 75°)	14	12	1897–1902.
4225	X Centauri	11 44 12	−41 12·1	11 42 57	−41 3·8								
4260	W Centauri	11 50 2	−58 41·8	11 48 48	−58 33·5								
4754	U Octantis	13 12 20	−83 42·1	13 9 32	−83 34·1	5	7·8	12·2	110^d	1900, Aug. 21. J.D. 2415253+300·9 E.	4	2	1899–1902.

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TABLE OF THE RESULTS OF OBSERVATIONS OF VARIABLE STARS—*continued.*

No.	Star.	1900. R.A.	1900. Dec.	1875. R.A.	1875. Dec.	Redness.	Magnitude. Max.	Magnitude. Min.	M-m.	Elements of Maximum, G.M.T.	Basis of Elements. M.	m.	Years.
4896	T Centauri.....	h m s 13 36 2	° ′ −33 5·5	h m s 13 34 36	° ′ −32 57·9	6	6·5–6·9	7·7–8·0	27d ?	1900, Feb. 17. J.D. 2415068+90d·21 E.	4	2	1895,99–1901.
4935	RT Centauri ...	13 42 30	−36 21·8	13 41 2	−36 14·2	7·6–8·9	7·9–8·9	10·8–<11·5	120d	,, Jan. 26. J.D. 2415046+248·0 E.	7	4	{1873, 80, 88, 97–1900.
4953	RX Centauri ...	13 45 32	−36 26·8	13 44 5	−36 19·3	4·0	8·6–9·0	<12·5		,, July 24. J.D. 2415225+329 E.	4		1890, 99–1901.
4957	T Apodis	13 46 3	−77 18·5	13 43 41	−77 11·0	(5)	8·1–8·8	12·5		,, Aug. 5. J.D. 2415237+269 E.	3		1900–02.
5075	RU Hydræ.....	14 5 48	−28 24·8	14 4 22	−28 17·6	4·6	7·5–8·8	<12·5		,, July 4. J.D. 2415205+332·3 E.	7		{1851, 79, 96–1901.
5134	T Lupi	14 15 43	−49 23·5	14 14 5	−49 16·6	8·0	8·25	8·9		Irregular.			1897–1900.
5572	R Normæ	15 28 45	−49 10·4	15 26 58	−49 5·2	7·4–7·9	6·9–7·4, A 7·4–7·6 B	11·5, A 8·4 B		1900, Feb. 3. J.D. 2415054+480·7 E. Double max. and min.	11	9	1752,1876–7, 1897–1902.
5608	U Normæ.....	15 34 37	−54 59·3	15 32 42	−54 54·4	7·0	8·6	9·25	6·0d	1900, Jan. 8·8. J.D. 2415028·8 + 12·655 [E.	20	20	1897–1900.
5618	T Normæ	15 36 20	−54 40·0	15 34 26	−54 35·1	4·9	7·0–8·1	12·0	108d	,, Aug. 29. J.D. 2415261+243·9 E.	6	2	1876,1899–1901.
5727	U Lupi	15 54 29	−29 38·3	15 52 56	−29 33·9	3½	8·9	11·0		Irregular.		11	1896–1901.
5752	RZ Scorpii.....	15 58 37	−23 49·4	15 57 8	−23 45·2	6	8·0–9·3	11·5–<12·5	75d ?	1899, Nov. 6. J.D. 2414965+158·0 E. + 20 × (sin 22°·5 × E.)	11		1873, 87, 91, 96–1901.
5941	ST Scorpii	16 30 14	−31 1·8	16 28 39	−30 58·5	7·8	7·8	9·6		Irregular.			1896–1901.
6019	RR Ophiuchi ..	16 43 10	−19 17·2	16 41 43	−19 14·3	5·6	8·0–8·5	<12·0		1900, Feb. 19. J.D. 2415070+298 E.	6		{1849, 85, 88, 98–1901.
6050	RS Scorpii.....	16 48 22	−44 56·4	16 46 34	−44 53·7	6·2–7·7	6·5	11·0–<12·0	130d ?	,, Sept. 7. J.D. 2415270+331·7 E.	5		{1873, 94, 99–1901.
6053	SS Scorpii.....	16 48 47	−32 27·9	16 47 10	−32 25·3	7·7	7·5	9·5		Irregular ?			1896–98.
6062	RR Scorpii	16 50 15	−30 25·2	16 48 40	−30 22·6								
6370	SV Scorpii.....	17 41 37	−35 40	17 39 56	−35 39	6	8·8–9·0	<11·6		1900, Sept. 2. J.D. 2415265+257 E.	5		1890, 98–1900.
6429	S Aræ.....	17 51 27	−49 25·3	17 49 32	−49 24·9		8·9	9·7	1h 36m	,, Jan. 1. J.D. 2415021·3+ 10h 50m 43s·5 E.	12	12	1890, 1898–1900.
6500	R Pavonis	18 3 17	−63 38·1	18 0 52	−63 38·2		7·5–8·6	12·0	90d ?	,, Mar. 23. J.D. 2415102+230·1 E.	7		1875, 80, 89, 91, 99–1901.
6636	U Sagittarii ...	18 26 0	−19 11·7	18 24 31	−19 12·6	4·3–6·0	7·0	8·0	3·3d	1899, Oct. 7·3. J.D. 2414935·3+6·74467 [E.			old and 1899–1900.
6806	S Cor. Aust. ...	18 54 26	−37 5·3	18 52 45	−37 7·2								1899–1901.
6811	R Cor. Aust. ..	18 55 9	−37 5·6	18 53 28	−37 7·5		9·7	<12·0					1899–1901.
6812	T Cor. Aust....	18 55 14	−37 6·4	18 53 33	−37 8·3								1899–1901.
6900b	RY Sagittarii .	19 10 1	−33 41·8	19 8 23	−33 44·3	3·5–5·5	6·9	<11·5		Irregular.			1897–1902.
7077	T Pavonis	19 39 29	−72 1·1	19 36 39	−72 4·5	5	7·3–9·1	<12·5		1900, Jan. 14. J.D. 2415034+244d·07 E.	5		{1751, 1874, 86, 1899–1902.
7122	S Pavonis.....	19 46 47	−59 27·2	19 44 39	−59 30·9	8·0	7·0	8·7		Irregular.			1898–1900.
7190	S Telescopii	19 58 26	−55 50·1	19 56 25	−55 54·2		9·0–11·5 ?	13·0		Irregular.			1887–1901.
7251	RZ Sagittarii ..	20 8 30	−44 42·8	20 6 45	−44 47·2	6·5	8·0–8·6	10·0 ?	89d ?	1900, Mar. 17. J.D. 2415096+212·4 E.	6	5	1890–8, 1901–2
7360	RU Capricorni.	20 26 44	−22 1·7	20 25 16	−22 6·7	(4)	9·0–9·4	<12·0		1900, Sept. 7. J.D. 2415270+341·0 E.	5		{1847, 84–5, 95, 99–1902.
7495	S Indi.....	20 48 59	−54 42·3	20 47 7	−54 47·9	(6·5)	8·6–8·9	<12·5		1901, Jan. 3. J.D. 2415388+402·7 E.	6		{1873, 1887, 94, 98–1901.
7538	RR Capricorni.	20 56 23	−27 29·0	20 54 54	−27 34·8					277 E.			
7685	S Microscopii .	21 20 48	−30 17·0	21 19 19	−30 23·3	6·8	7·9–8·2	11·5	80d ?	1900, July 11. J.D. 2415212+213·2 E.	5		1895–1900, 02.
7994	R Piscis Austr.	22 12 19	−30 6·2	22 10 53	−30 13·7								
8040	S Gruis	22 19 54	−48 57	22 18 24	−49 4	6·5	7·4–8·0	[11·5–12·5]	150d ?	1900, Oct. 21. J.D. 2415314+401d·8 E.	4		1889, 1898–1901
8093	R Indi	22 28 53	−67 48·4	22 27 4	−67 56·0	(5)	8·5–8·9	12·5	75d ?	,, June 22. J.D. 2415193+216d·0 E.	5		{1873, 83, 98–1901.
8588	R Phoenicis....	23 51 16	−50 20·6	23 49 58	−50 28·9	5·8	7·4	13·0 ?	130d ?	,, Mar. 23. J.D. 2415102+268d·9 E.	7		{1872, 84, 89, 98–1901.
8604	S Phoenicis.....	23 53 54	−57 7·9	23 52 36	−57 16·3	6·0	6·8	8·4		Irregular.			1898–1901.

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110. S TUCANÆ.

C.P.D.—62°, No. 28. Found in no other catalogue.

	R.A.	Dec.
1875.	$0^h\ 17^m\ 11^s$	$-62°\ 22'·0$.
1900.	**0 18 23**	**−62 13·7.**

The variability of this star was announced by Mrs Fleming of the Harvard Observatory in *Astr. Nach.*, No. 3299 (July 6, 1895). This discovery was due to the examination of the photographs of stellar spectra taken at Arequipa, Peru, under the direction of Professor S. J. Bailey, forming a part of the work of the Henry Draper Memorial.

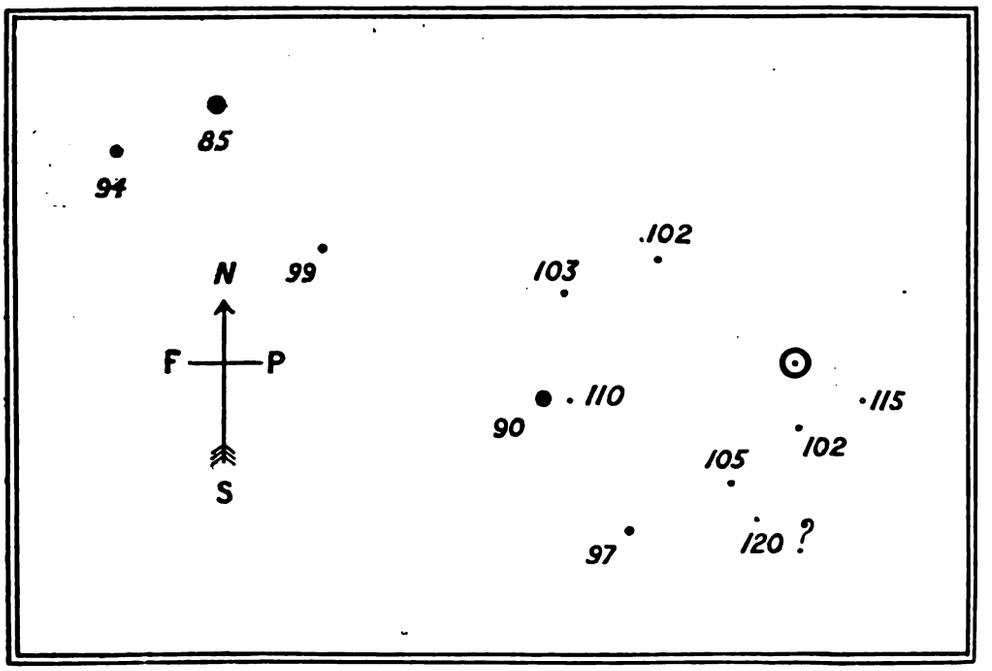
The star has, according to Mrs Fleming, a spectrum of the third type, having also the hydrogen lines bright, and its variability was at once suspected from this peculiarity. The variation was confirmed independently by Professor E. C. Pickering, by an examination of fifteen photographs of the region. The resulting magnitudes are given below.

The photographic observations are:—

C.P.D. Plate,		Julian Day.	Mag.
No. 453.	1886, Sept. 24	2410174	9·3
Arequipa.	1889, ,, 11	11257	<10·9
	,, Oct. 8	11284	10·6
	,, Nov. 28	11335	9·4
	1890, Sept. 12	11623	9·4
	,, ,, 23	11634	9·7
	1891, Aug. 20	11965	<10·7
	,, Sept. 17	11993	<11·3

		Julian Day.	Mag.
Arequipa.	1891, Oct. 4	2412010	<11·5
	,, ,, 4	,,	<11·6
	,, ,, 26	12032	11·3
	1892, July 31	12311	8·7
	,, Sept. 5	12347	9·2
	1893, Oct. 23	12760	<10·3
	1894, July 6	13016	8·8
	,, ,, 23	13033	9·0

The map which follows gives the comparison stars used in the visual observations made here.



NOTE.—The magnitudes of the stars on the map have been multiplied by 10.
The existence of the star 120 is somewhat doubtful.
The arrow is 5′ deep in declination and the bar $20^{sec.}$ broad in R.A.

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Cape visual observations :—

	Julian Day.	Mag.
1898, Oct. 15	2414578	9·8 ?
,, ,, 17	580	9·9
,, Nov. 30	624	10·5
,, Dec. 4	628	10·5
,, ,, 14	638	11·0
,, ,, 20	644	[11·0]
1899, Jan. 7	662	10 5
,, ,, 24	679	9·9
,, Feb. 4	690	9·4
,, ,, 10	696	9·25
,, ,, 12	698	9·3
,, ,, 18	704	9·15
,, ,, 22	708	9·2
,, ,, 26	712	9·2
,, ,, 28	714	9·3
,, Mar. 5	719	9·25

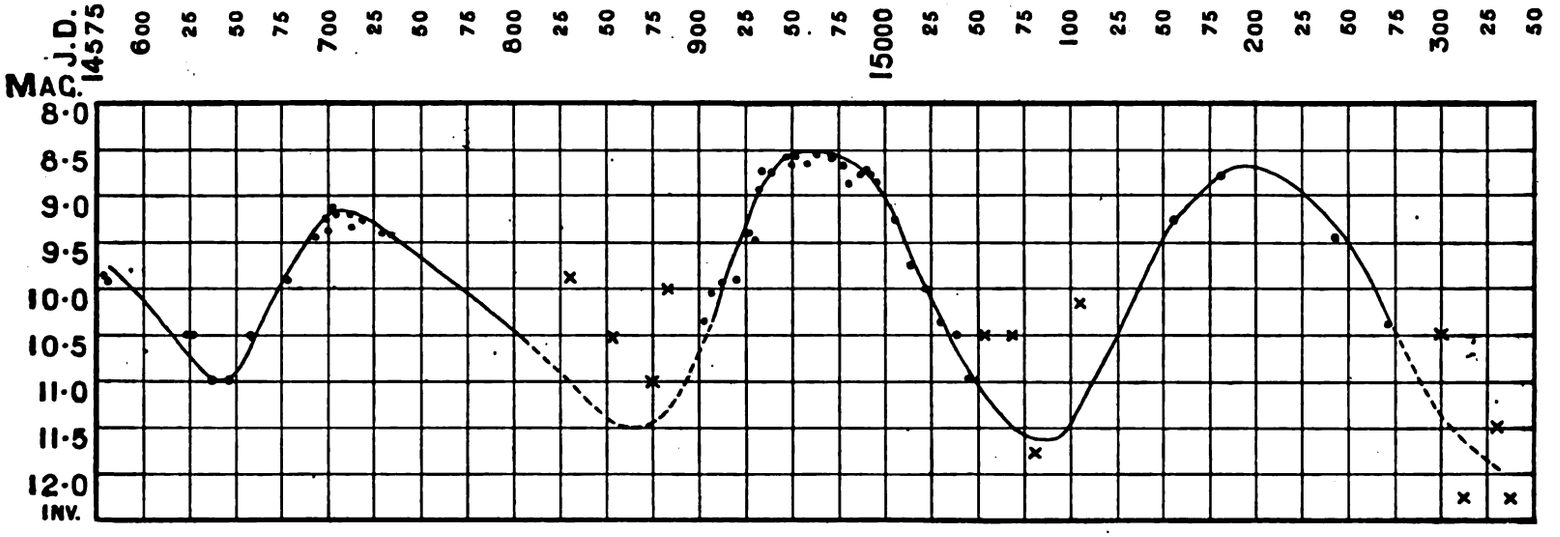
	Julian Day.	Mag.
1899, Mar. 15	2414729	9·3
,, ,, 17	731	9·3
,, June 25	831	< 9·8
,, July 18	854	< 10·5
,, Aug. 8	875	inv.
,, ,, 16	883	< 10·0
,, Sept. 6	904	[10·3]
,, ,, 12	910	10·1
,, ,, 16	914	9·9
,, ,, 19	917	9·9
,, ,, 27	925	9·4
,, ,, 30	928	9·5
,, Oct. 3	931	8·9
,, ,, 6	934	8·75
,, ,, 10	938	8·75

	Julian Day.	Mag.
1899, Oct. 18	2414946	8·6
,, ,, 22	950	8·7
,, ,, 25	953	8·6
,, Nov. 2	961	8·7
,, ,, 7	966	8·55
,, ,, 11	970	8·6
,, ,, 18	977	8·7
,, ,, 22	981	8·8
,, ,, 27	986	8·75
,, Dec. 1	990	8·7
,, ,, 4	993	8·75
,, ,, 8	997	8·8
,, ,, 15	15004	9·25
,, ,, 24	13	9·75
1900, Jan. 2	22	10·0

	Julian Day.	Mag.
1900, Jan. 10	2415030	10·3
,, ,, 17	37	10·5
,, ,, 22	42	11·0
,, Feb. 4	55	< 10·5
,, ,, 20	71	< 10·5
,, ,, 26	77	< 11·7
,, Mar. 22	101	< 10·2
,, May 20	160	9·25
,, June 14	185	8·75
,, Aug. 13	245	9·4
,, Sept. 7	270	10·4
,, Oct. 7	300	< 10·5
,, ,, 20	313	< 12·5
,, Nov. 2	326	< 11·5
,, ,, 13	337	< 12·5

The colour is not noticeable, on one occasion only is it recorded, viz., 1899 Oct. 3, as yellow 4.

The visual observations are plotted on the following diagram.



MAGNITUDE-CURVE OF S TUCANÆ.
From Cape Visual Observations, 1898–1900.
× = invisible, but below.....mag.

To find the average period it is admissible to use the photographic results. It would thus appear that maxima took place as follows :—

Julian Day of Maximum with its probable extreme error.	O.—C. d
2410174 ± 30	+ 9·0
11335 ± 20	−25·0
11608 ± 15	+ 8·6
12311 ± 20	− 6·6

Julian Day of Maximum with its probable extreme error.	O.—C. d
2413016 ± 20	−19·8
14704 ± 5	− 7·1
14952 ± 10	+ 1·1
15190 ± 20	− 0·3

The probable extreme error of the maximum indicates what seems the greatest possible alteration of the given date, which would still satisfy the observations sufficiently.

The column O.—C. is the difference between the assumed Julian Days of observed maximum and epochs computed with J. D. 2410163 + 239^{d}·4 E.

It is evident from the above diagram that the curve of this star is very irregular, and that the maximum ranges from 8^{m}·5 to 9^{m}·2 at least, and the minimum from 11^{m}·0 to invisibility in the 7-in. refractor or under 12^{m}·5.

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A comparison with similar variables in Chandler's 3rd. Catalogue follows :—

Name.	Colour.	Range. m m	Period. d
110 S Tucanæ	(4)	8·5 / 9·2 — 11·0 / <12·5	239·4
893 U Ceti	3	6·8 / 7·3 — 12·0	235·8
5430 T Libræ	...	9·2 / 10·2 — <14·7	238·
5931 S Ophiuchi	1	8·3 / 9·0 — <13·0	233·8
5955 R Draconis	2·0	6·5 / 8·7 — 12 / 13	245·6

Name.	Colour.	Range. m m	Period. d
6921 S Sagittarii	0	9·1 / 10·4 — 14·5	230·6
7450 V Aquarii	2·5	8·1 — 9·3	240·
8068 S Lacerta	...	7·6 / 8·2 — <12·0	233·
8324 V Cassiopeiæ	...	7·1 / 8·1 — 12·4	229·

S Tucanæ has been studied by Dr A. W. Roberts of Lovedale. (*Astr. Journ.*, No. 491-492). A comparison of the results are :—

	M	m	M–m	Elements of Maximum.
Roberts :—	9·0	11·8 !	75^d !	2415193^d + 238^d·5
Cape :—	8·5/9·2	<12·5	...	2415190 + 239 ·4

The maximum of J.D. 2415190 is the first after 1900, Jan. 0.

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146. T SCULPTORIS.

C.Z. 0^h 620. C.G.A. 404. Cor. DM. – 38° No. 138.

Not in the C.P.D.

	R.A.	Dec.
1875.	0^h 23^m 2^s·8	–38° 36′·0.
1900.	**0 24 16·9**	**–38 27 ·7.**

This star occurs in Dr Thome's List of Suspected Variable Stars in vol. xvii. of the *Cordoba Observations* (Part II. of the Cor. DM.) on page xvii., where it is marked ! !

Its variability was confirmed by Mr R. H. West whose observations are given in the *Astr. Journs.*, No. 363 (1896, Jan. 8) and No. 385 (1896, Oct. 4).

Cape observations are to be found in the *Astr. Nach.*, Nos. 3426 and 3447, and the *Astr. Journ.* No. 468.

The observations of all the above authorities are quoted below.

Observations.	Date.	Julian Day.	Mag.
Cordoba :— C.Z.	1872, Nov. 9	2405107	8·5
,, C.G.A.	1880, Oct. 31	8020	8·75
,, ,,	,, Nov. 1	8021	8·75
,, ,,	,, ,, 2	8022	8·75
,, Th. Cor. D.	1889, ,, 25	11332	8·5
C.P.D. Plate No. 255.	1890, Jan. 10	11378	nil.
Cordoba Th. Cor. D.	1890, Oct. 14	11655	...
,, ,,	1892, Nov. 22	12425	...
,, ,,	,, Dec. 15	12448	invis

Observations.	Date.	Julian Day.	Mag.	
Mr R. H. West. A.J. 363.	1895, Nov. 8	2413506	10·05	Eighteen observations in all, but these are the only days quoted. The maximum of 7·85 occurred on 1896, Jan. 10 = J. D. 2413569.
,, ,,	,, ,, 16	13514	9·6	
,, ,,	,, ,, 22	13520	9·3	
,, ,,	,, ,, 28	13526	9·0	
,, ,,	,, Dec. 2	13530	8·8	
,, ,,	,, ,, 7	13535	8·6	
,, A.J. 385.	,, ,, 27	13555	8·4	
,, ,,	1896, Feb. 4	13594	nil.	

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The Cape observations are as follows :—

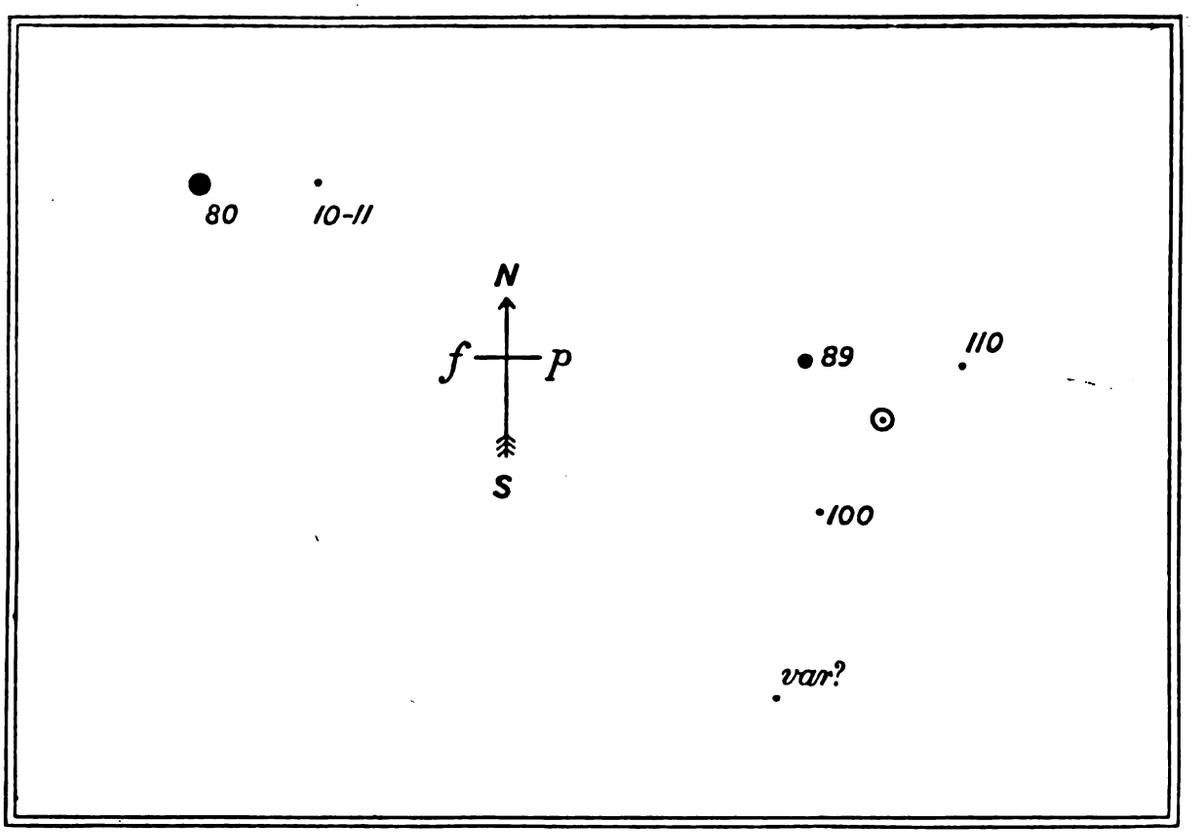
1896.	Julian Day.	Mag.	Colour.
Dec. 30	2413924	9·1	no colour.
1897.			
Jan. 23	13948	8·4	orange.
,, 25	13950	8·1	or.-red.
,, 29	13954	8·0	red.
,, 31	13956	8·1	reddish.
Feb. 4	13960	8·3	red 6.
,, 8	13964	7·9	,, 7.
Sept. 13	14181	8·4	yellow.
,, 25	14193	8·6	
Oct. 19	14217	9·1	
,, 23	14221	9·4	
,, 31	14229	9·4	
Nov. 25	14254	10·5	
Dec. 1	14260	11·0	
,, 17	14276	inv.	
,, 26	14285	,,	
1898.			
Jan. 2	14292	,,	
,, 6	14296	,,	
,, 15	14305	10·5	
,, 16	14306	10·0	
,, 19	14309	9·8	
,, 21	14311	9·9	

1898.	Julian Day.	Mag.
Jan. 26	2414316	9·7
,, 30	14320	9·25
Feb. 8	14329	9·0
,, 14	14335	8·9
,, 19	14340	8·8
May 16	14426	9·0
June 8	14449	10·2
Aug. 23	14525	9·8
Sept. 5	14538	9·5
,, 14	14547	9·4
,, 21	14554	9·4
,, 23	14556	9·25
,, 28	14561	9·0
,, 30	14563	8·85
Oct. 12	14575	8·75
,, 15	14578	8·7
,, 17	14580	8·6
Dec. 6	14630	9·85
,, 14	14638	9·9
,, 20	14644	10·1
,, 30	14654	11·0
1899.		
Jan. 15	14670	inv.
Feb. 4	14690	inv.

1899.	Julian Day.	Mag.
Aug. 27	2414894	inv.
Sept. 5	14903	10·7
,, 25	14923	[9·2]
,, 27	14925	[9·4]
,, 30	14928	9·2
Oct. 3	14931	8·95
,, 6	14934	9·0
,, 10	14938	8·9
,, 14	14942	8·8
,, 18	14946	8·6
,, 22	14950	8·6
,, 25	14953	8·4
Nov. 2	14961	8·45
,, 7	14966	8·3
,, 11	14970	8·6
,, 18	14977	8·6
,, 22	14981	8·3
,, 26	14985	8·4
Dec. 7	14996	8·5
,, 13	15002	8·6
,, 15	15004	8·7
,, 19	15008	8·7
,, 24	15013	8·95

1900.	Julian Day.	Mag.
Jan. 2	2415022	9·2
,, 10	15030	9·5
,, 14	15034	9·5
Nov. 23	15347	8·8
,, 26	15350	8·85
Dec. 1	15355	8·75
,, 7	15361	8·5
,, 12	15366	8·45
,, 14	15368	8·5
,, 16	15370	8·3
,, 18	15372	8·3
,, 26	15380	8·1
,, 27	15381	7·9
,, 29	15383	8·1
1901.		
Jan. 2	15387	8·2
,, 8	15393	8·2
,, 11	15396	8·4
,, 16	15401	8·5
,, 21	15406	8·7
,, 26	15411	8·7
Feb. 9	15425	9·7

The map used here was as follows :—



NOTE.—The magnitudes are multiplied by 10.
The arrow is 5′ in length, the cross bar $10^{secs.}$ across.

The Cape observations are plotted on the next page.

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A comparison between the observed maxima and the formula :—

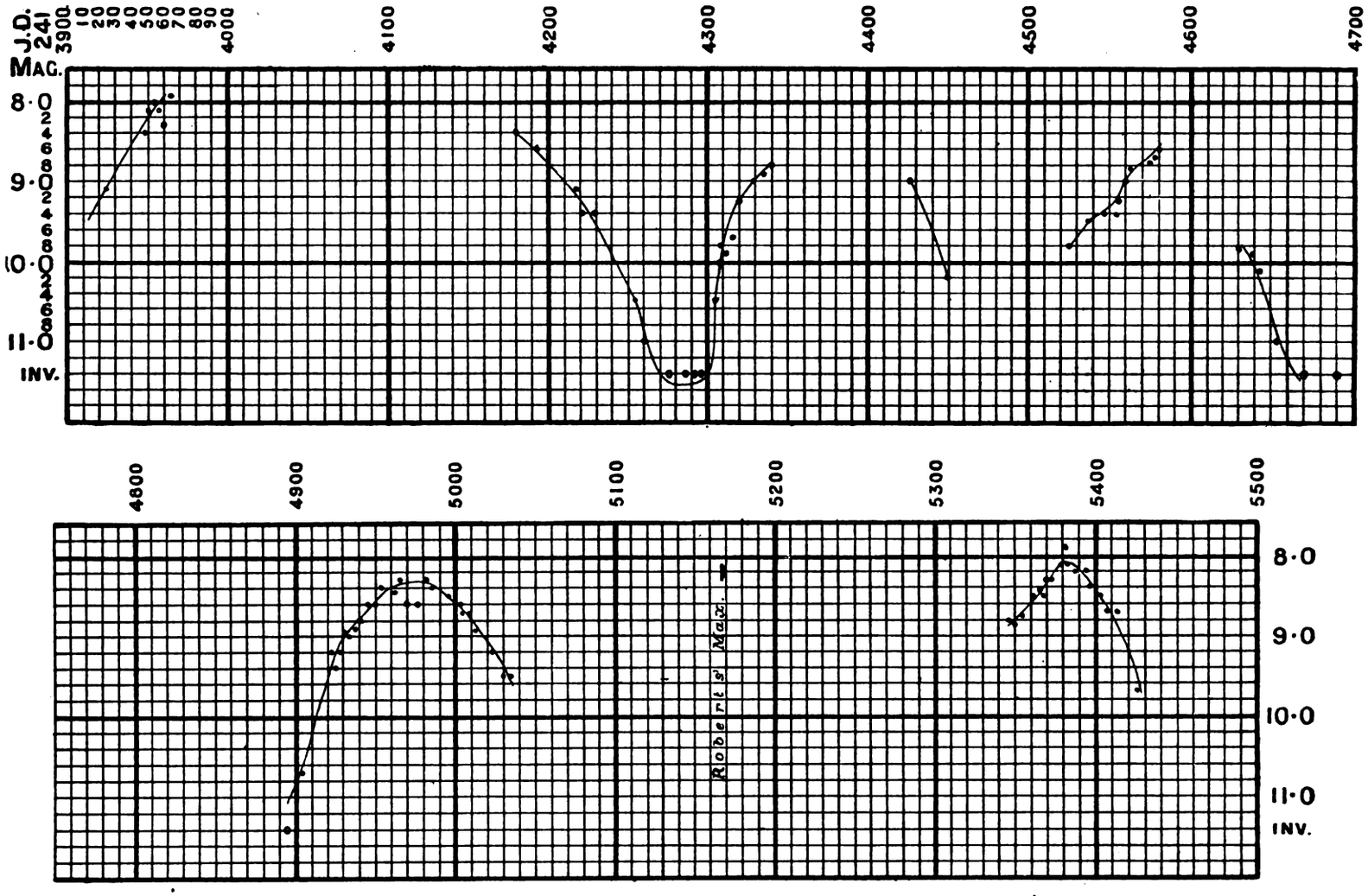
Maxima = J. D. 2415194 + 205^{d}·5 E

is as follows :—

Mag.	Observed Maxima. Julian Day.	Computed Maxima. Julian Day.	O.—C. d.
8·5	2405107	2405125	−18
8·75	8020	8002	+18
8·5	11332	11290	+42
7·85	13569	13550	+19

Mag.	Observed Maxima. Julian Day.	Computed Maxima. Julian Day.	O.—C. d
7·9	13964	2413961	+ 3
8·6	14580	14578	+ 2
8·3	14970	14989	−19
7·9	15382	15400	−18

It is hardly probable that the period is incorrect, but it should be mentioned that a period of 197^{d}·6 will give a representation of the maxima, which is not very greatly inferior to the above. Observations in a few years' time will settle this point. It is evident, in any case, that the period is subject to large inequalities.



Dr Roberts's elements *Astr. Journ.* Nos. 491–492 are as follows :—

Range 8^{m}·6 to 11^{m}·4.
M—m = 85^{d}.
Maxima = J. D. 2415169 + 201^{d}·5.

For comparison with T Sculptoris we have, amongst others :—

	Name.	Colour.	Range of Mag.	Period. d
146	T Sculptoris	6	7·9 to 12·0 ?	205·5
4596	U Virginis	1·1	7·7- 8·1 ,, 12·2-12·8	207·0
5593	W Librae	...	9·8 ,, <14	206·
7252	W Capricorni	...	10·2-11·0 ,, <14·7	207·7

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Mention may be made here of the star 147 R R Sculptoris = Cor. D.M. – 38°, No. 142, mag. 9·6, $0^h\ 23^m\ 18^s - 38°\ 44'·7$, which is about 10′·5 S. of T Sculptoris. It is included on the above map. The separate observations at Cordoba are :—

1889, Nov. 25. 10^m
1890, Oct. 14. $9·0^m$.

At the Cape, this star has never been seen brighter than $10^m·5$. The observations are given below, but it must be remembered that my estimates of so faint a star in a sparse field are not very reliable.

The Cape observations by themselves do not indicate variability.

			Mag.
1897,	Jan.	25,	11·0
,,	,,	29,	11·0
,,	Feb.	4,	11·5
,,	Sept.	13,	11·0
,,	,,	25,	11·5
,,	Oct.	19,	11·0
,,	,,	23,	11·0
,,	,,	31,	11·5
,,	Nov.	25,	11·0
,,	Dec.	1,	11·3
,,	,,	17,	11·0
,,	,,	26,	11·5
1898,	Jan.	2,	11·3
,,	,,	6,	11·5
,,	,,	15,	11·5
,,	,,	16,	11·7
,,	,,	19,	< 10·5
,,	,,	21,	11·5
,,	,,	26,	Faint
,,	,,	30,	,,

			Mag.
1898,	Feb.	8,	Faint
,,	May	16,	10·5
,,	June	8,	11·0
,,	Aug.	23,	< 10·3
,,	Sept.	5,	10·5
,,	,,	14,	10·5
,,	Oct.	12,	10·5
,,	,,	17,	10·5
,,	Dec.	6,	10·5
,,	,,	14,	10·7
,,	,,	30,	10·5
1899,	Jan.	15,	11·5
,,	Aug.	27,	11·0
,,	Sept.	5,	10·5
,,	,,	25,	10·5
,,	,,	30,	11·5
,,	Oct.	3,	10·5
,,	Dec.	7,	10·8
1900,	,,	16,	11·5–12·0

If there is no mistake in the Cordoba observation of 1890, the star cannot be constant in light. References will be found in the *Astr. Nach.* Nos. 3426 and 3447.

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869. R FORNACIS.

Cor. D.M. —26°, No. 892. Not in C.P.D. See List II. *bis.* No. 31, Vol. III. p. 73.

	R.A.	Dec.
1875.	$2^h\ 23^m\ 40^s$	—26° 39′·2.
1900.	**2 24 47**	**—26 32·3.**

This star appears in Thome's list of Suspected Variables in Part I. of the *Cor. Durchmusterung* on p. xlii. where it is marked ! ! and observations which are repeated below are given.

The variability of the star was confirmed in the *Astr. Journ.* No. 371 of April 4, 1896, by Mr. R. H. West of the Syrian Protestant College at Beirut, and further observations by the same observer are given in the same journal for Oct. 6, 1897, No. 414, wherein a period of 410 days is suggested as provisional.

The observations made at Cordoba and Beirut, with those made here, are all that have been published. It is not probable that this star will ever be photographed as it is the reddest met with in my experience, but I have not seen it brighter than 9·1 mag. Perhaps at a bright maximum the star is not so red, as in Chandler's 3rd Variable Star Catalogue, the redness is given as 6*; a number which would here be assigned to a deep orange-coloured star.

The observations are :—

			Julian Day.	Mag.	Colour.
Cordoba	1886,	Oct. 23	2410203	10·0	
,,	,,	Nov. 13	10224	10·0	
,,	,,	,, 14	10225	10·0	
,,	1887,	Sept. 11	10526	8·5	
,,	1891,	Dec. 27	12094	8·7	"color"
West	1895,	Nov. 8	13506	9·65	Eleven obs. between these dates, show a slow but steady increase. The star is quite red, being about the same color as 3128 R Pyxidis.
,,	1896,	Feb. 10	13600	8·75	
,,	,,	Oct. 28	13861	10·5	Ten obs. between these dates show a steady increase.
,,	1897,	Feb. 27	13983	8·9	
Cape	,,	Jan. 15	13940	9·9	Very red.
,,	,,	,, 29	13954	9·9	Intense red.
,,	1898,	Aug. 6	14508	9·85	
,,	,,	Sept. 23	14556	9·95	
,,	,,	Oct. 12	14575	10·5	
,,	1899,	Jan. 24	14679	9·8	red.
,,	,,	Sept. 25	14923	10·0	(red).
,,	,,	,, 27	14925	10·7	
,,	,,	,, 30	14928	10·0	(red).
,,	,,	Oct. 13	14941	10·2	
,,	,,	,, 22	14950	11·0	
,,	,,	Nov. 5	14964	11·5	

			Julian Day.	Mag.	Colour.
Cape	1899,	Dec. 1	2414990	11·0	
,,	1900,	Jan. 1	15021	12·0	
,,	,,	,, 6	15026	11·7	
,,	,,	Feb. 4	15055	10·5	
,,	,,	,, 20	15071	10·2	red 9.
,,	,,	,, 25	15076	9·8	,, 9.
,,	,,	Mar. 3	15082	10·0	
,,	,,	,, 6	15085	10·0	
,,	,,	,, 10	15089	10·2	
,,	,,	,, 18	15097	10 ±	
,,	,,	,, 22	15101	9·7	red 9.
,,	,,	,, 27	15106	9·6	,, 9.
,,	,,	,, 30	15109	9·65	,, 9.
,,	,,	Apr. 3	15113	9·6	,,
,,	,,	,, 16	15126	9·1	
,,	,,	June 14	15185	9·1	red.
,,	,,	Aug. 17	15249	9·6	
,,	,,	Sept. 1	15264	9·2	red 8.
,,	,,	,, 13	15276	9·2	,, 9.
,,	,,	Oct. 7	15300	9·2	,, 9.
,,	,,	,, 20	15313	9·8	
,,	,,	Nov. 2	15326	9·9	red.
,,	,,	,, 13	15337	9·9	,, 9·5.

If we assume a maximum for J. D. 2410530, and a period of 385·0 days, we have

Observed Maxima.	O.—C. d	
J.D. 2410526	− 4	Cordoba.
2094	+24	,,
3600	−10	West.
3983	−12	,,
5151	+ 1	Cape.

which is a fair representation, considering the redness of the star and the rather poor data available.

We also have

$$M - m = 140^d \pm. \quad \text{Redness} = 9\cdot0.$$

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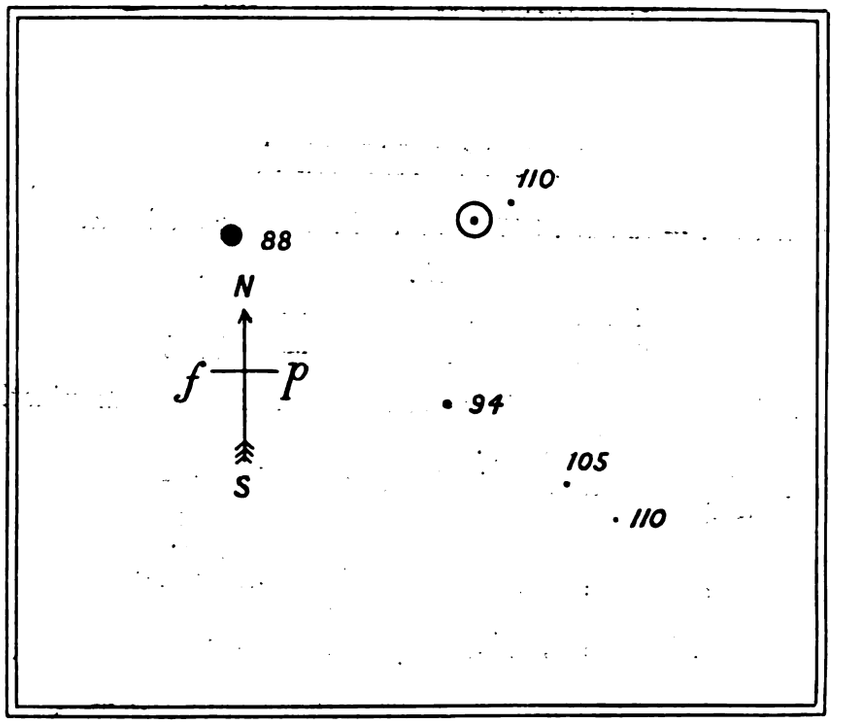
The following map shows the stars used for comparison at the Cape.

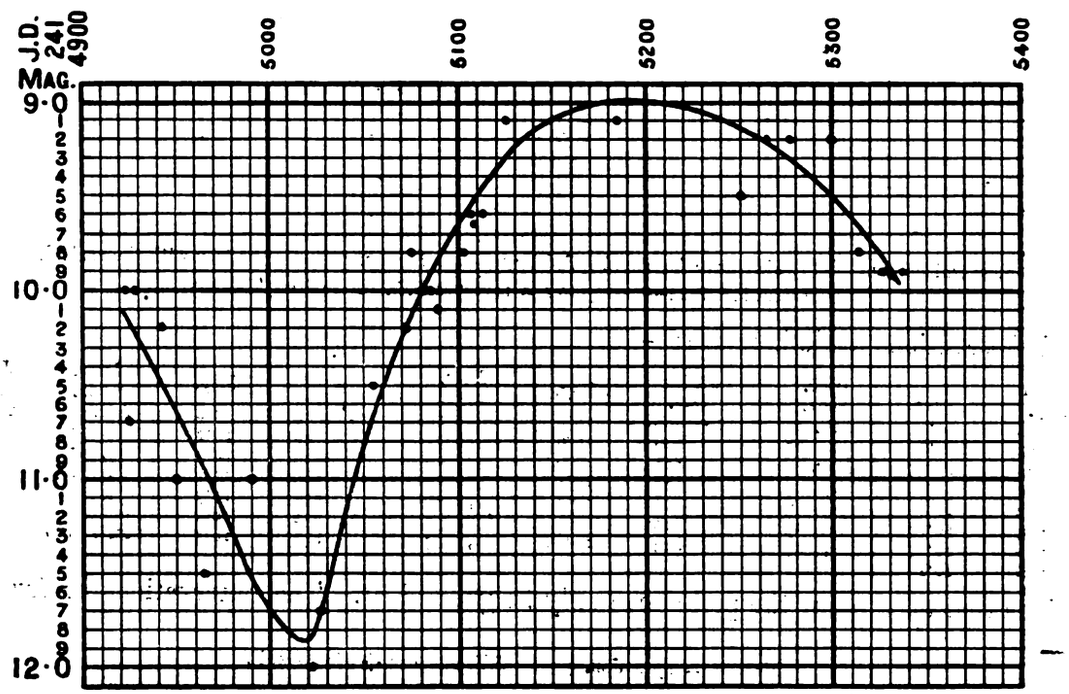


NOTE.—The magnitudes on the map have been multiplied by 10. The arrow is 5′ deep, the cross bar $10^{secs.}$ broad.

Comparison with other variable stars :—

Name.			Colour.	Range of Mag.	Period. d
869	R	Fornacis	9·0	8·5 to 12·0	385·0
1761	R	Orionis	4·9	8·7–9·1 ,, 11·2–13·5	380·0
2478	R	Lyncis	4·8	7·8–8·0 ,, < 13·0	380·0
6170	RW	Scorpii	...	9·4 ,, 14·1	387· ?
6903	T	Sagittarii	6·5	7·6–8·1 ,, < 11·0	384·

The curve about the time of the maximum of 1900 is shewn on the diagram.



MAGNITUDE-CURVE OF 869 R FORNACIS.
From 1899 Sept. 25 to 1900, Nov. 13.

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885. X ERIDANI.

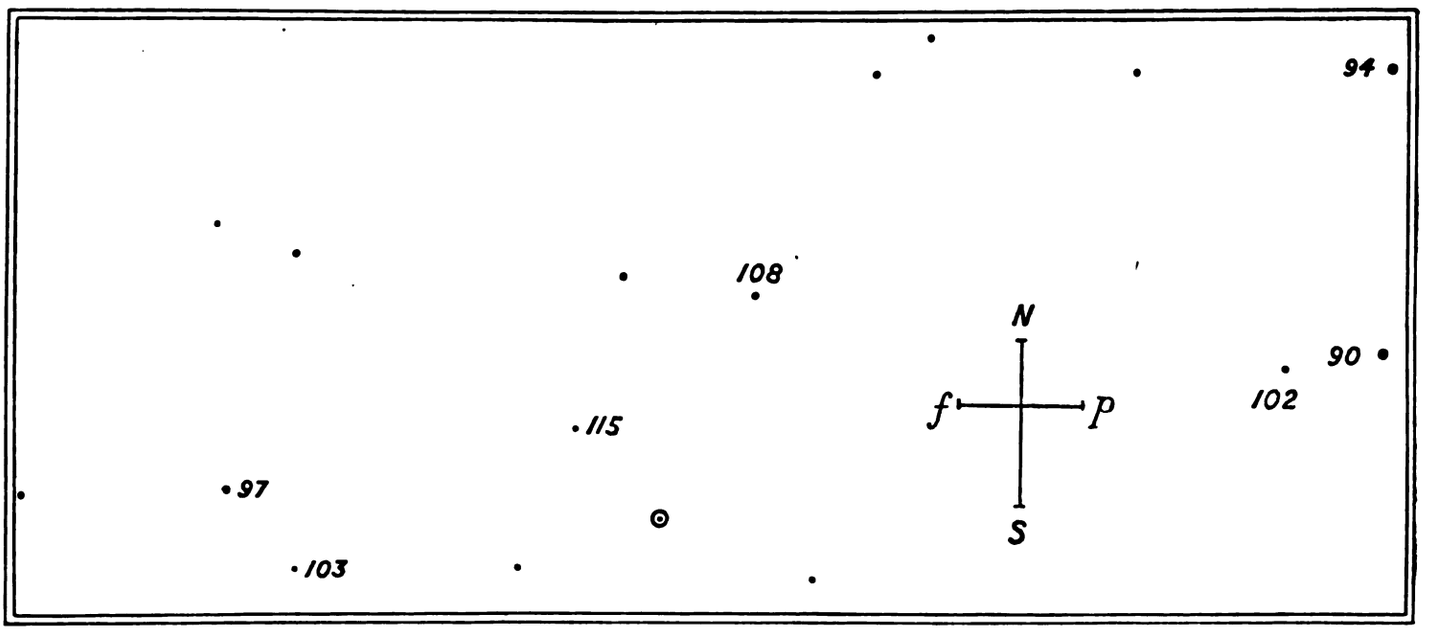
Cor. D.M. —42°, No. 845. 10m. In no other catalogue.

	R.A.	Dec.
1875.	$2^h\ 26^m\ 27^s$	—42° 0′·8
1900.	**2 27 26**	**—41 54·1**

The discovery of the variability of this star is one of the first fruits of an examination of the *Carte du Ciel* plates which is now in progress at this Observatory.

The following are the roughly estimated magnitudes from the plates:—

Plate No.	Date.	Julian Day.	Estimated Magnitude.
809	1892, Nov. 22	2412425	9·5
2198	1893, ,, 14	2782	< 10·0 (poor plate)
3956	1895, Dec. 2	3530	10·8
4610	1897, Nov. 26	4255	9·8
5119	1898, ,, 19	4613	11·5



The magnitudes marked (which have been multiplied by ten) are those used for comparison with the variable star.
The cross-bars are:—From p to f = 20^{secs} in R.A. N to S = 5′ in Dec.

The visual observations made here are:—

Date. 1902.	Julian Day.	Mag.	Date. 1902.	Julian Day.	Mag.	Date. 1902.	Julian Day.	Mag.	Date. 1902.	Julian Day.	Mag.	
Jan. 22	2415772	10·4	Feb. 19	2415800	10·2	Mar. 15	2415824	10·2	Apr. 9	2415849	10·4	
,, 24	774	10·8	,, 25	806	10·0	,, 17	826	10·2	,, 13	853	10·5	
,, 26	776	10·35	Mar. 2	811	10·0	,, 20	829	10·2	,, 16	856	10·6	
,, 30	780	10·3	,, 4	813	10·1	,, 24	833	10·2	,, 23	863	< 10·7	
Feb. 1	782	10·4	,, 7	816	10·0	,, 30	839	10·3	,, 28	868	10·75	v.g.
,, 8	789	10·15	,, 13	822	10·2	Apr. 2	842	10·4	June 17	918	< 11·0	
,, 15	796	10·25	,, 14	823	10·25	,, 4	844	10·5	July 18	949	< 10·3	
,, 17	798	10·1										

It is obvious that at present the period can only be guessed at. The observations so far are satisfied by the formula:—

Maxima = 1900, Jan. 4 J.D. 2415024 + 260 days, E.

The region is shewn on the above map.

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1023. R HOROLOGII.

Cor. D.M. —50°, No. 860. 10^m. In no other catalogue.

	R.A.	Dec.
1875.	$2^h\ 49^m\ 43^s{\cdot}5$	—50° 24′·0
1900.	**2 50 33·1**	**—50 17·9** (Cape M.O. 1899).

The variability of this star was announced by Mrs M. Fleming in *Astr. Nach.* No. 3104 of 1892, July 20. The discovery was caused by the examination of a photograph of stellar spectra taken under the direction of Professor W. H. Pickering at Arequipa, Peru, on Sept. 10, 1891. The star was also found on at least 5 other photographs.

The variation was confirmed by Dr A. W. Roberts of Lovedale, C.C., in *Astr. Journ.* No. 349 for 1895, July 16, who gave the limits of 5·8 mag. at maximum to 10·0 mag. at minimum.

No details of observations have yet been published.

In Dr Chandler's 3rd Catalogue we find :—

Max. 1889, Aug. 30 J.D. 2411245 + 371 d. E. ?

We have :—

C.P.D. Plate No.	Date.	Julian Day.	Mag.
2521	1890, Feb. 14,	2411413	<9·6

The colour of the star is such that it might have been equal to about 8·7 mag. visually but less than 9·6 mag. on a photograph.

Cape Observations :—

Date. 1898.	Julian Day.	Mag.
Sept. 23	2414556	8·9 orange.
,, 30	4563	9·1
Oct. 12	4575	9·25
,, 17	4580	9·4
Nov. 1	4595	9·6
,, 12	4606	9·7
,, 19	4613	9·8
,, 29	4623	9·9
Dec. 4	4628	9·95
,, 14	4638	9·95
,, 20	4644	9·95
,, 31	4655	10·0
1899.		
Jan. 24	4679	10·5
Feb. 4	4690	10·5
,, 12	4698	9·8
,, 15	4701	9·9
,, 18	4704	9·8
,, 22	4708	9·75
,, 26	4712	9·6 red.
,, 28	4714	9·8
Mar. 4	4718	9·65
,, 7	4721	9·8

Date. 1899.	Julian Day.	Mag.
Mar. 12	2414726	9·6
,, 17	4731	9·45
,, 19	4733	9·5
,, 21	4735	9·45
Apr. 27	4772	8·7 red 7.
,, 28	4773	8·8
May 2	4777	8·8
,, 4	4779	8·7 red 8.
,, 10	4785	8·6 ,,
,, 12	4787	8·0 ,,
,, 19	4794	7·3 ,, 8.
,, 22	4797	7·3
Aug. 16	4883	7·0 red 7·5.
,, 27	4894	7·3 ,, 7.
,, 31	4898	7·2 ,, 7.
Sept. 5	4903	7·7
,, 16	4914	7·8
,, 19	4917	7·9
,, 25	4923	8·2
,, 27	4925	8·2
,, 30	4928	8·2
Oct. 6	4934	8·2
,, 10	4938	8·4

Date. 1899.	Julian Day.	Mag.
Oct. 18	2414946	8·4
,, 22	4950.	8·7
Nov. 5	4964	8·95
,, 7	4966	8·85 red 8.
,, 11	4970	8·7
,, 17	4976	9·1
,, 21	4980	9·15
,, 28	4987	9·25
Dec. 1	4990	9·3
,, 8	4997	9·25
,, 15	5004	9·5
,, 22	5011	9·6
1900.		
Jan. 2	5022	<10·0
,, 6	5026	9·7
,, 14	5034	9·75
,, 24	5044	9·8
Feb. 4	5055	10·0
,, 8	5059	10·2
,, 20	5071	10·0
,, 26	5077	9·7
Mar. 3	5082	9·7
,, 10	5089	9·7

Date. 1900.	Julian Day.	Mag.
Mar. 18	2415097	9·6
,, 22	5101	9·4
,, 25	5104	9·3
,, 27	5106	9·35
,, 30	5109	9·3
Apr. 3	5113	9·2
,, 16	5126	8·65
,, 17	5127	8·8
,, 28	5138	8·5
May 3	5143	8·2
,, 13 daylight	5153	7·75 red 8.
,, 20	5160	8·15
,, 24	5164	7·8
June 14	5185	6·0 yellow 5.
Aug. 13	5245	6·0 red 6.
Sept 1	5264	6·5 ,, 6.
,, 13	5276	6·6 ,, 7.
Oct. 7	5300	7·2 ,, 6.
,, 20	5313	7·35 ,, 6.
Nov. 2	5325	7·9 ,, 7.
,, 6	5330	8·0 ,, 8.
,, 9	5333	8·0
,, 19	5343	8·0

Reference to this variable is made in the *Astr. Journ.*, No. 468 of 1899, Aug. 29.

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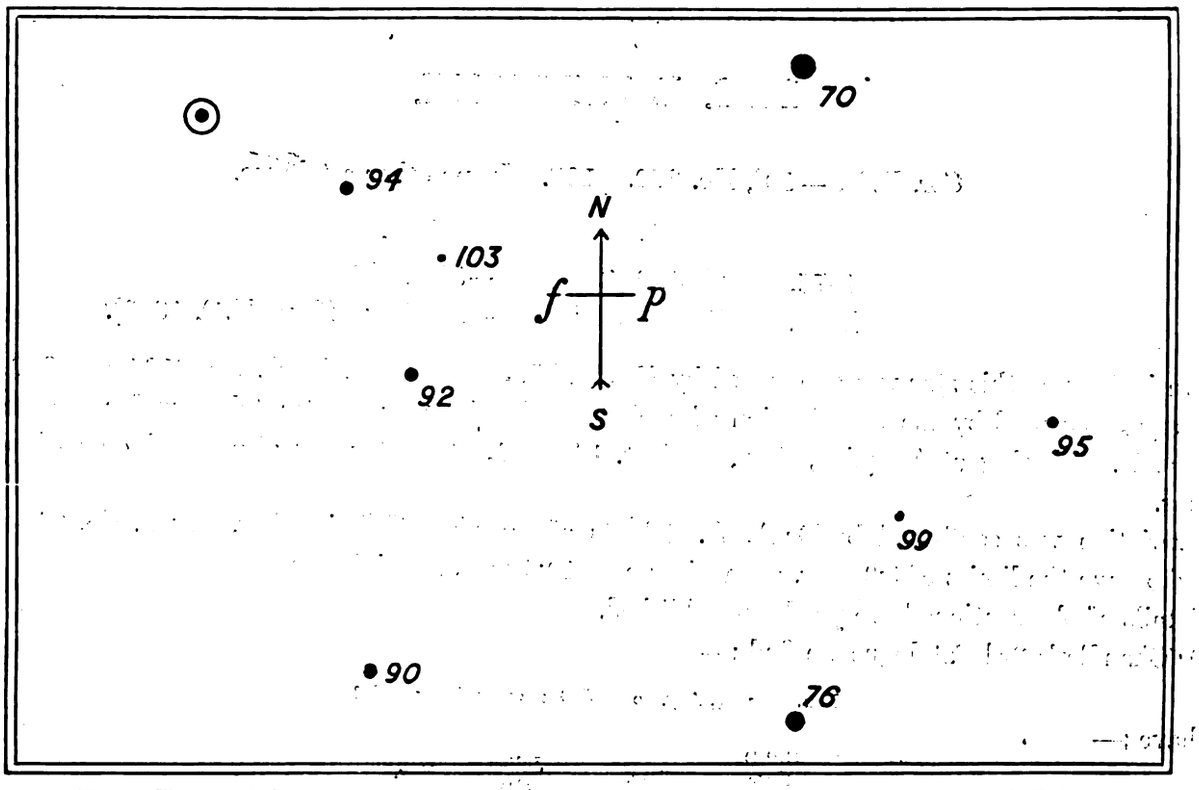
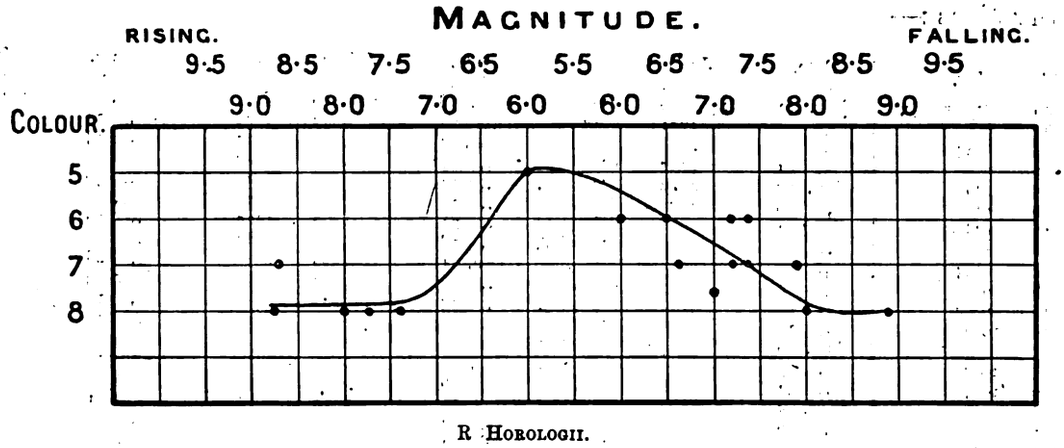
The map which follows shews the comparison stars used at the Cape. When R Horologii is brighter than 7·0 mag., no comparison star was used.

It may be remarked that there has been some confusion about the place of this star. The Cape position is correct, and as such the star is 1023 R Horologii; in Chandler's Catalogue it was originally numbered 1018.



NOTE.—The magnitudes are multiplied by ten. The arrow is 5′ long in dec., and the cross bar 12 secs. in R.A.

The observations made at the Cape have been plotted on the two following diagrams. The first shows the change in the star's colour as the magnitude waxes and wanes. The second is the usual variable star curve.



R HOROLOGII.
Colour Curve.

The colour curve shews that at maximum this star is less red than at other times. The curve also indicates that the decrease of colour is more rapid than the increase, thus following the normal curve of magnitudes for variable stars.

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The curve of magnitudes shews that no maximum has been observed here, nevertheless, epochs of maxima and minima may be assumed to have occurred as follows :—

	Julian Day.	Interval. d.
Minimum	2414658	
Maximum	4805	147
Minimum	5055	250
Maximum	5190	135

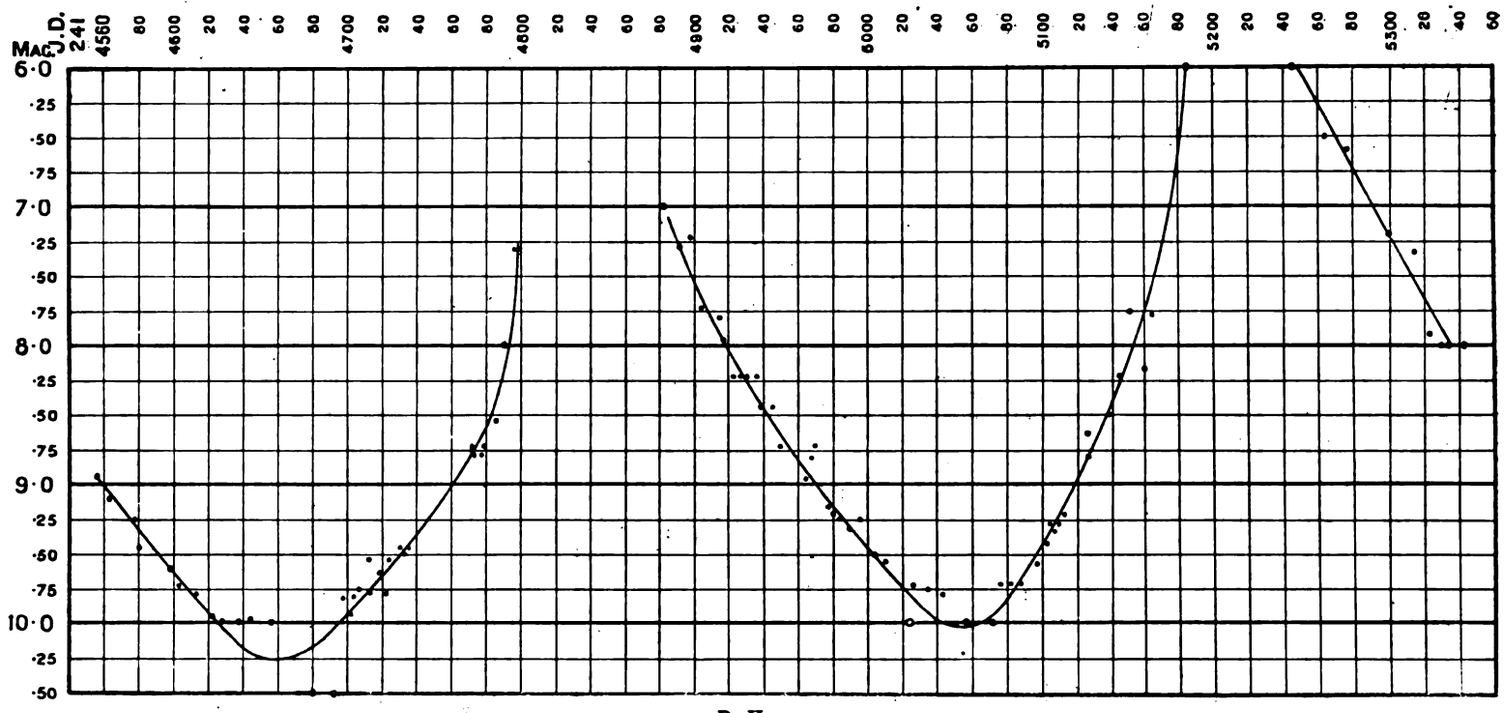
Chandler gives a maximum on J.D. 2411245. This gives the two following intervals with the Cape maxima :

3560 days and 3945 days.

The only numbers of periods which seem allowable are 9 and 10, which in the mean yield a period of 395·0 days.

Interval from minimum to maximum = 141 days±.

Colour change :—5·0 to 8.0, *i.e.* from deep yellow to very red.



1023 R HOROLOGII.
Magnitude Curve.

Since the above was written, Dr Roberts's paper on Southern Variable Stars has been published (*Astr. Journ.*, Nos. 491-492) so that a comparison with his elements can be made :—

	Magnitude.	M-m.	Maxima.
Roberts :—	5·6 — 6·6 to 10·8 — 11·6	154d	J.D. 2415229 + 405d·0.
Cape :—	5·8 to 10·3	141	2415190 + 395 ·0.

Dr Roberts kindly writes that he considers that

J.D. 2415222 + 403d

gives a better representation of his observations than his published formula.

The variation of the following stars taken from Dr Chandler's third Catalogue bears considerable resemblance to that of R Horologii.

	Mag.	Colour.	Period.
112 R Andromedæ	$\frac{5·6}{8·6}$ to < 12·8	5·0	410d·7 + inequality.
2735 U Canis Min.	$\frac{8·5}{9·0}$ to $\frac{12·3}{13·5}$	5·1	410
5889 U Herculis	$\frac{6·6}{7·8}$ to $\frac{11·4}{12·7}$	6·5	409 + inequality ?
7609 T Cephei	$\frac{5·2}{6·8}$ to $\frac{8·6}{10·7}$	6·3	387

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1066. T HOROLOGII.

C.Z. 2^{hs} No. 1547. C.P.D.—51°, No. 354.

	R.A.	Dec.
1875.	$2^h\ 56^m\ 52^s{\cdot}4$	$-51°\ 8'{\cdot}2$
1900.	**2^h 57 40·2**	**−51 2·2**

This star is marked with a ? in the C.Z. Catalogue, shewing that it has been looked for at Cordoba and not found. It is No. 1 of a list of Suspected Variable Stars given by Professor J.C. Kapteyn in C.P.D., vol. I. p. (93). The variability is definitively announced by the same astronomer in the *Astr. Nach.*, No. 3389 of 1896, Nov. 30. Cape observations are quoted in the *Astr. Journals*, Nos. 442 and 468 of 1898, Aug. 22, and 1899, Aug. 29.

The observations are:—

		Julian Day.	Mag.
Cordoba.	C.Z. 1872, Dec. 23.	2405151	8·5
	,, —	—	Not visible.
C.P.D.	plate No. 845 1887, Oct. 25	2410570	<9·9
,,	968 ,, Nov. 25	10601	9·4
,,	978 ,, ,, 29	10605	9·2
,,	2521 1890, Feb. 14	11413	<9·9
,,	2526 ,, ,, 15	11414	<9·9

Cape:—

1897.	Julian Day.	Mag.	
Nov. 26	2414255	9·9	
Dec. 11	270	9·2	
,, 13	272	9·0	
,, 17	276	8·9	
,, 18	277	8·8	
,, 19	278	8·9	
,, 23	282	8·75	orange.
,, 26	285	8·8	
,, 30	289	8·7	
1898.			
Jan. 2	292	8·4	red.
,, 4	294	8·3	
,, 5	295	8·4	
,, 7	297	8·2	
,, 9	299	8·3	red 7.
,, 12	302	8·4	
,, ,,	,,	8·6	by de Sitter.
,, 14	304	8·3	
,, 15	305	8·2	
,, 19	309	8·3	
,, 21	311	8·3	
,, 26	316	8·1	good, yellow.
,, 30	320	8·2	white.
Feb. 7	328	8·0	orange.
,, 11	332	8·3	red.
,, 14	335	8·3	red 7·5.
,, 18	339	8·4	
,, 22	343	8·5	
,, 27	348	8·7	red.

1898.	Julian Day.	Mag.	
Feb. 28	2414349	8·9	red.
Mar. 3	352	8·8	red.
,, 9	358	9·0	
,, 13	362	9·2	
,, 18	367	9·2	red.
,, 21	370	9·45	red.
,, 23	372	9·7	
,, 31	380	9·8	
Apr. 4	384	9·9	
,, 12	392	11·0	good.
,, 14	394	11·5	difficult.
,, 20	400	<10·5	
,, 23	403	<10·0	
May 16	426	<11·0	
June 8	449	10·4	
July 23	494	8·8	
Aug. 6	508	8·3	
,, 24	526	7·9	red.
Sept. 5	538	7·9	
,, 14	547	[8·0]	
,, 23	556	[8·0]	
,, 30	563	8·5	
Oct. 12	575	9·0	
,, 17	580	9·25	
Nov. 1	595	9·9	
,, 12	606	10·3	
,, 19	613	inv.	
,, 29	623	,,	
Dec. 4	628	,,	

1898.	Julian Day.	Mag.	
Dec. 14	2414638	inv.	
,, 20	644	,,	
,, 31	655	glimpsed ?	
1899.			
Jan. 24	679	[11·0]	
Feb. 4	690	10·6	
,, 12	698	9·85	
,, 15	701	9·9	
,, 22	708	9·7	
,, 26	712	9·45	
,, 28	714	9·3	
Mar. 4	718	9·3	
,, 7	721	9·4	
,, 12	726	9·3	
,, 17	731	9·2	
,, 19	733	9·05	red.
,, 21	735	9·15	
Apr. 27	772	8·4	
,, 28	773	8·8	
May 2	777	8·75	
,, 4	779	8·75	
,, 10	785	8·9	
,, 12	787	9·0	
,, 19	794	[9·5]	
Aug. 16	883	< 9·8	
,, 27	894	10·5	
,, 31	898	10·3	
Sept. 5	903	10·3	
,, 16	914	10·	

1899.	Julian Day.	Mag.	
Sept. 27	2414925	9·45	
,, 30	928	9·3	
Oct. 3	931	9·1	
,, 6	934	9·1	
,, 10	938	9·1	
,, 13	941	9·05	
,, 18	946	8·9	
,, 22	950	8·9	
,, 25	953	8·7	
Nov. 5	964	8·3	
,, 7	966	8·0	yellow 3.
,, 10	969	7·9	,, 3.
,, 11	970	7·7	,, 4.
,, 17	976	7·8	
,, 21	980	7·7	
,, 22	981	7·8	
,, 26	985	8·0	
,, 28	987	8·0	colour 2.
Dec. 1	990	8·3	yellow 2.
,, 4	993	8·0	
,, 8	4997	8·5	
,, 15	5004	8·5	
,, 22	5011	9·05	
1900.			
Jan. 3	5023	9·45	
,, 6	5026	9·8	
,, 14	5034	9·8	
Nov. 27	5351	9·4	

NOTE.—1897, Nov. 26. Near a faint, very small cluster.

The comparison stars used will be found on the map on p. 33B.

The Cape visual observations have been plotted on the diagram on p. 34B.

The following maxima (M) and minima (m) may be inferred from the diagram.

Julian Day.	Interval.	Julian Day.	M.−m.
M = 2414322		m = 2414418	116d
534	212d	655	106
761	227	860	118
978	217		

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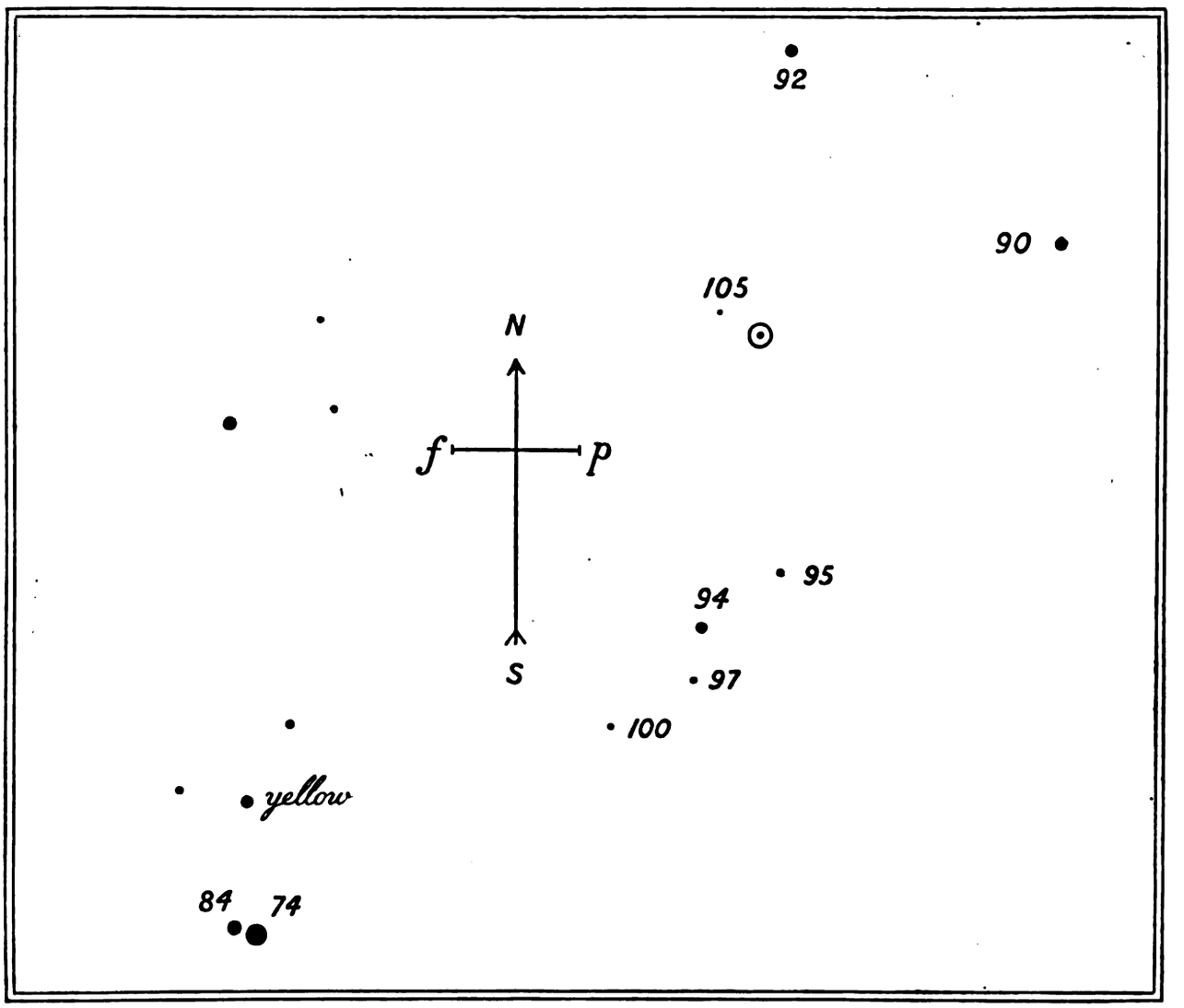
We can now introduce the following maxima so as to derive a mean period.

Cordoba.	J.D. 2405151 ± 10 days.
C.P.D.	2410605 ± ,,

The intervals with the last Cape maximum are 9827 and 4373 days. The only numbers of periods which will give approximately the mean period derived from the Cape visual observations, viz., 219 days are 45 and 20 respectively. These yield $218^{d}\cdot38$ and $218^{d}\cdot65$.



The magnitudes of the comparison stars only are given and they have been multiplied by ten.
The cross is to scale 10′ in Dec. 1^{m} in R.A.

The mean elements are thus :—

Maximum = J.D. 2415195 + $218^{d}\cdot4$ E.

M–m. 113^{d}.

Range. $\frac{7\cdot7}{8\cdot3}$ m. to $\left[\frac{11\cdot5}{12\cdot0}\right]$ m.

The decrease in light is almost certainly quicker than the increase.

The colour observations are very discordant, the mean is about 4·1 which would represent a full yellow tint.

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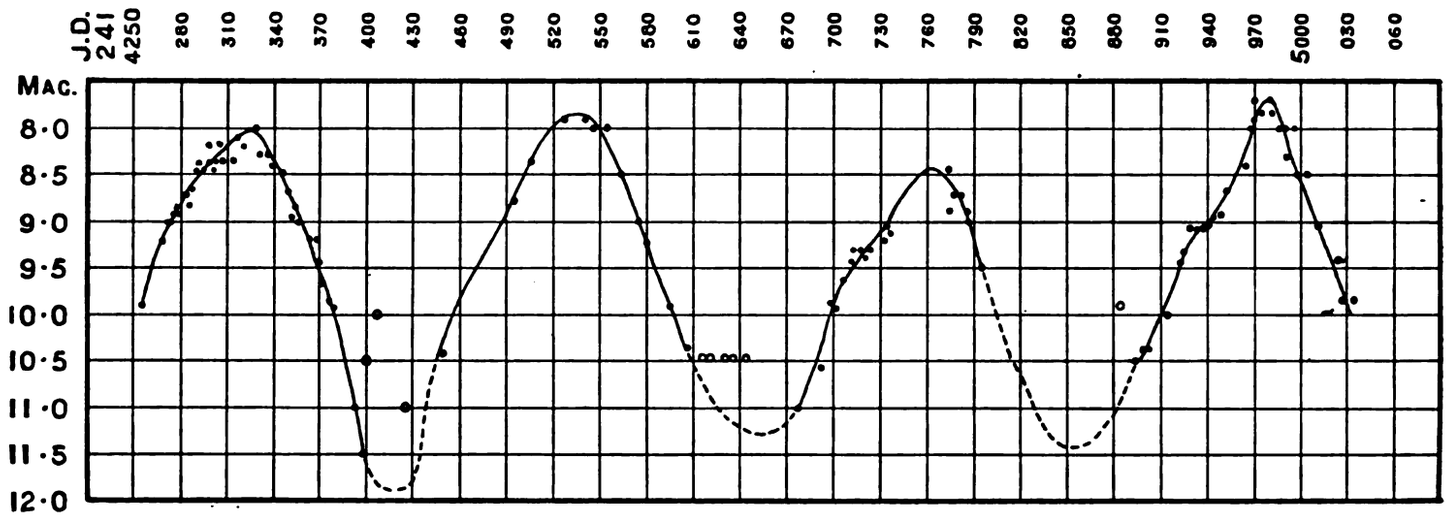
This star only appears in the new volume of the Cordoba D.M. (Vol. III.) in the list of Suspected Variables p. xxxix. It was looked for at Cordoba on 1899, Jan. 10 and 11, but not seen.

From comparisons with Chandler's 3rd. Catalogue we have :—

	Col.	M-m.	Range of Mag.	Period. d
1066 T Horologii	4·1	113	7·7- 8·3 to <11·5	218·4
1894 T Columbæ	...	...	7·6 ,, 11·3	218·
4492 Y Virginis	3·6	85 :	8-9·4 ,, 11·5-13	218·8
7577 X Capricorni	...	117 :	9·5-10·5 ,, <16·2	218·1



1066 T HOROLOGII.
Curve of Magnitudes. o = invis. but under.

A comparison with Dr Roberts's elements is as follows :—

	Range of Mag.	M-m.	Maxima.
Roberts :—	8·5 to 11·6?	100d?	J.D. 2415193 + 218d·2 E.
Cape :—	7·7-8·3 to 11·5-12·0	113	2415195 + 218d·4 ,,

1232. T FORNACIS.

C.Z. 3h No. 721. Cor. D.M. – 28°, No. 1162 = 9·2 mag.

	R.A.	Dec.
1875.	3h 24m 22s·8	—28° 50′·0.
1900.	**3 25 25·3**	**—28 44·8.**

This star appears in Prof. Kapteyn's list of Missing Stars—see star No. 28 on page 2A of this volume. In the original list the records stood thus—Z.C. = 9 mag:; Cor. D.M. 9·2 mag. and Revision 9·5 mag. These results by themselves hardly indicated variability, but when it was found that Gould had once observed the star as 8½ mag. and once as 9½ mag., Sir David Gill pointed out to me that it was surely quite impossible that a star once estimated as 8½ mag. could in the absence of colour be missing from the C.P.D. unless it was variable. Further observations were at once undertaken and three nights' results were sufficient to prove that, as Sir David Gill expected, the star was really variable.

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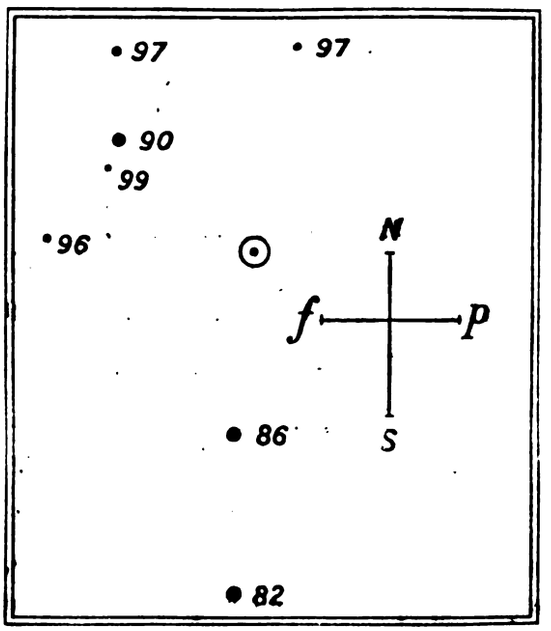
The following map shews the stars used for comparison :—



The magnitudes have been multiplied by ten.
The crossbars are :—N. to S. =5′ in Dec.
p. to f. =20 secs. in R.A.

The old observations are :—

Authority.	Date.	Julian Day.	Magnitude.
Gould C.Z.	1872, Oct. 18	2405085	8·5
,,	1873, Dec. 18	05511	9·5
Thome Cor. D.M	1886,		9·2
Kapteyn C.P.D.	1889, Jan. 24	2411027	nil.
Finlay, Cape 7-in.	1895, Nov. 19	13517	9·5 (but = 9·0 on the scale of the later Cape observations).

The following observations were made at the 7-inch telescope :—

Date. 1901.	Julian Day.	Mag.
Dec. 21	2415740	9·2
,, 22	5741	9·2
,, 23	5742	9·5
,, 28	5747	9·5
,, 31	5750	9·5
1902.		
Jan. 6	5756	9·6
,, 10	5760	9·5
,, 15	5765	9·7
,, 17	5767	9·75
,, 19	5769	9·7

Date. 1902.	Julian Day.	Mag.	Col.
Jan. 24	2415774	9·65	
,, 26	5776	9·6	
,, 30	5780	9·6	
Feb. 1	5782	9·65	
,, 8	5789	9·55	
,, 15	5796	9·2	
,, 17	5798	8·9	
,, 19	5800	8·9	5
,, 21	5802	8·8	
,, 25	5806	8·6	
Mar. 2	5811	8·5	6

Date. 1902.	Julian Day.	Mag.
Mar. 4	2415813	8·5
,, 7	5816	8·7
,, 13	5822	9·0
,, 14	5823	9·1
,, 15	5824	9·0
,, 17	5826	9·0
,, 20	5829	9·25
,, 24	5833	9·25
,, 30	5839	9·5
Apr. 2	5842	9·6

Date. 1902.	Julian Day.	Mag.
Apr. 4	2415844	9·6
,, 9	5849	9·7
,, 13	5853	9·7
,, 16	5856	9·7
,, 23	5863	9·7
,, 28	5868	9·75
May 1	5871	9·75
,, 6	5876	9·65
,, 10	5880	9·55
July 14	5945	9·0

The Cape observations from Dec. 1901 to May 1902 suggest a period of about 92 days, during which the light increases for 42 days and diminishes for 50 days. This period does not fit in with the single observation of July 1902, which indicates a period of about 110 days. Further observations are required.

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1701. R PICTORIS.

C.Z. 4 hrs, No. 1453. C.G.A. 5428. C.P.D.—49°, No. 577.

Cor. D.M. —49°, No. 1439.

	R.A.	Dec.
1875.	$4^h\ 42^m\ 49^s{\cdot}2$	$-49°\ 28'{\cdot}3$.
1900.	**4 43 29·1**	**−49 25·6.**

The variability of this star was announced by Mrs Fleming in the *Astr. Nach.* No. 3299 of 1895, July 6, as a result of an examination of the photographs of stellar spectra taken at Arequipa under the direction of Professor S. J. Bailey, and forming part of the work of the Henry Draper Memorial. This star has a spectrum of the third type, having also the hydrogen lines bright, and variability was at once suspected through this peculiarity. An independent examination of chart plates by Professor E. C. Pickering confirmed the variability.

We find the following magnitudes recorded :—

		Julian Day.	Mag.
Cordoba, C.Z.	1873, Dec. 29	2405522	8·0
,, ,,	1874, Jan. 15	5539	8·5
,, C.G.A.	1880, Nov. 19	8039	not taken.
,, ,,	,, ,, 20	8040	8
,, ,,	,, ,, 25	8045	8
,, ,,	,, ,, 28	8048	8
,, D.M.	189		7·8
C.P.D. Plate 369	1890, Feb. 14	11413	7·5
Harvard.	1889, Sept. 26	1272	8·5
,,	,, ,, 26	,,	8·3
,,	,, Oct. 4	1645	8·5
,,	,, ,, 8	1649	8·6

		Julian Day.	Mag.
Harvard.	1890, Sept. 23	2411634	8·8
,,	1891, Oct. 26	2032	8·6
,,	1892, Sept. 28	2370	8·6
,,	,, ,, 29	2371	8·6
,,	,, Dec. 8	2441	9·5
,,	1893, Nov. 18	2786	9·0
,,	1894, Aug. 21	3061	8·1
,,	,, ,, 25	3066	8·2
,,	,, Sept. 14	3086	8·4
,,	,, ,, 19	3091	8·5
,,	,, ,, 19	,,	8·5
,,	,, Oct. 19	3121	8·9

The Cape Observations are :—

Date. 1900.	Julian Day.	Mag.	Col.
Oct. 20	2415313	8·0	
,, 23	5316	8·2	4
Nov. 1	5325	8·1±	
,, 10	5334	8·0	
,, 23	5347	7·3±	
,, 26	5350	7·1	6
,, 30	5354	7·0±	
Dec. 1	5355	7·0	5
,, 7	5361	6·8	
,, 12	5366	7·0	5
,, 14	5368	6·9	4
,, 16	5370	7·2	8
,, 26	5380	7·0	7·5
,, 29	5383	7·0	6
1901.			
Jan. 8	5393	7·0	7
,, 11	5396	7·0	6
,, 21	5406	7·3	
Feb. 1	5417	7·5	7
,, 9	5425	7·0	7
,, 19	5435	7·0	7
,, 26	5442	7·0	7

Date. 1901.	Julian Day.	Mag.	Col.
Mar. 4	2415448	7·2	
,, 15	5459	7·3	6
,, 23	5467	8·0	7
,, 25	5469	9·0	6
,, 26	5470	9·0	
,, 29	5473	9·0	
,, 31	5475	9·0	8
Apr. 4	5479	9·0	
,, 11	5486	9·0	
,, 13	5488	9·15	
,, 15	5490	9·1	
,, 21	5496	9·0	
May 3	5508	8·8	
,, 17	5522	7·9	
,, 29	5534	7·0	
July 10	5576	6·9	6
Aug. 9	5606	7·9	7
,, 27	5624	8·0	8
Oct. 5	5663	8·2	
,, 15	5673	7·5	
,, 21	5679	7·3	
,, 29	5687	7·3	

Date. 1901.	Julian Day.	Mag.	Col.
Nov. 12	2415701	6·9	
,, 14	5703	7·0	
,, 16	5705	7·2	
,, 22	5711	6·9	
,, 27	5716	7·5	
,, 30	5719	6·7	
Dec. 2	5721	6·8	5
,, 10	5729	6·7	
,, 14	5733	6·7	7
,, 19	5738	6·8	5
,, 21	5740	6·5	
,, 22	5741	6·5	7
,, 23	5742	6·6	
,, 28	5747	6·6	
1902.			
Jan. 6	5756	6·9	6
,, 10	5760	7·0	7
,, 18	5768	7·0	7
,, 24	5774	7·0	
Feb. 1	5782	8·0	
,, 8	5789	8·2	

Date. 1902.	Julian Day.	Mag.	Col.
Feb. 15	2415796	8·5	
,, 17	5798	8·7	
,, 19	5800	8·8	
,, 25	5806	9·0	
Mar. 2	5811	8·9	
,, 7	5816	8·9	
,, 14	5823	8·9	
,, 17	5826	8·8	
,, 20	5859	8·9	
,, 30	5839	8·75	
Apr. 2	5842	8·5	
,, 9	5849	8·1	
,, 13	5853	8·1	
,, 16	5856	7·5	4
,, 23	5863	7·5	3
,, 28	5868	7·3	
May 6	5876	7·2	
,, 10	5880	7·1	
,, 26	5896	7·6	
,, 28	5898	7·2	
June 10	5911	6·8	

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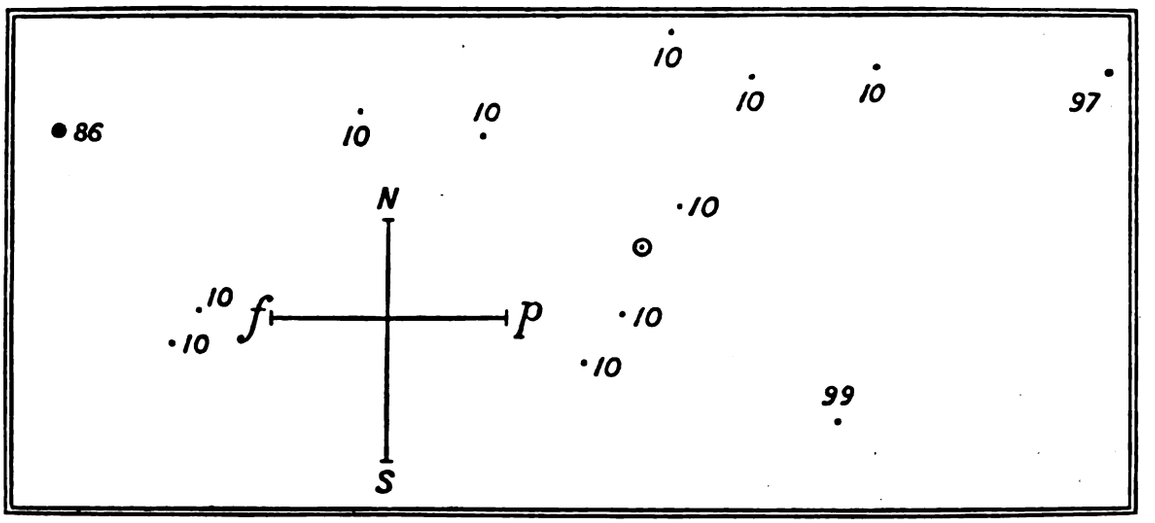
The following rough elements may be given as a first approximation :—

Maxima :—1900, Jan. 10 = J.D. 2415030 + 168·4^d × E.
Range of magnitude :—6·5–6·9 to 8·2–9·1.
Colour = 6·5.
M − m. = 49^d.

This is a variable star of the class in which there are sharp well marked minima.

This star is not very well placed for observation as there are no good comparison stars within easy reach with the 7-inch refractor. The following map shews its immediate surroundings :—



The cross-bars are :—From N. to S. = 10′ in Dec. From *p.* to *f.* = 1^m in R.A.

Dr Roberts remarks (*Astr. Journ.*, Nos. 491–492) that this star is subject to great irregularities in its variation. He gives an approximate period of 160 days.

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1752. U LEPORIS.

B.D. −21°, No. 1019. C.P.D. −21°, No. 694.

	R.A.	Dec.
1875.	4h 50m 56s	−21° 24′·9.
1900.	4 52 0	−21 22·4.

The variability of this star is pointed out by Professor J. C. Kapteyn in the *Astr. Nach.*, No. 2987 of 21st Aug. 1890. Some Cape observations given in the *Astr. Journ.*, No. 468, of 29th Aug. 1899, further prove the variability. Schönfeld gives the separate B.D. estimates in the above quoted number of the *Astr. Nach.* The older observations are as follows :—

	Date.	Mag.	
Schönfeld,	1876, Dec. 21	9·5	
,,	1877, Jan. 9	10·0	Sky hazy ?
,,	1879, Dec. 16	9·5	
C.P.D. Plate,	1889, Mar. 11	9·0	
,,	,, ,, 23	10·0	

In looking at the above evidence, it will be seen that there may be multitudes of such variable stars, but their detection as such is difficult. The light changes of this star occur very rapidly so that had the C.P.D. plate been exposed either two or three hours earlier or later, the difference of magnitude might have been too small to have attracted attention.

The Cape Observations are :—

1899.	C.M.T.	Mag.	
Feb. 4		10·0	
12		9·6	
26		9·1	
27		10·0	
28		9·75	
Mar. 4	8h 26m	10·0	
7	8 21	9·75	
12		9·5	
13	10 6	9·25	
15		9·65	
17	7 17	9·9	
,,	8 40	9·3	
,,	8 54	9·3	
19	6 53	9·25	
,,	7 11	9·3	
,,	7 31	9·4	
,,	7 54	9·4	
21	8 33	9·63	
,,	10 34	9·75	
22	8 59	9·6	
Apr. 27	6 22	9·5	
28	6 47	9·0	good.
29	7 32	9·85	very good.
,,	7 38	9·7	
,,	7 44	9·7	
May 2	6 22	9·7	
,,	7 20	9·3	
,,	7 44	9·1	very good.
4	6 25	9·7	
,,	6 30	9·6	
,,	6 46	9·45	
10	6 17	9·8	
,,	7 0	9·75	
Nov. 5	8 8	9·85	
7	8 24	9·2±	
,,	8 28	9·3	
,,	8 33	9·33	
,,	8 55	9·35	
,,	9 0	9·35	
,,	9 26	9·37	
10	8 43	9·4	
,,	8 57	9·4	
,,	9 9	9·4	

1899.	C.M.T.	Mag.	
Nov. 10	9h 26m	9·4	
,,	9 32	9·4	
,,	9 44	9·4	
11	9 7	9·1	
,,	9 11	9·15	
,,	9 25	9·25	
,,	9 38	9·25	
,,	10 7	9·35	
,,	10 27	9·37	
,,	10 48	9·35	
,,	11 27	9·37	
12	9 57	9·6	
,,	10 17	9·7	
,,	10 29	9·6	
,,	10 34	9·6	
,,	10 49	9·6	
,,	11 2	9·7	
13	8 47	9·75	
,,	9 5	9·7	
17	7 55	9·45	
18	10 6	9·3	
,,	10 33	9·3	
21	8 52	9·45	
,,	9 4	9·45	
,,	9 29	9·4	
,,	9 42	9·45	
22	9 10	9·45	
23	8 17	9·6	cloudy.
26	9 32	9·75	
,,	9 38	9·75	
27	7 44	9·75	
28	9 12	9·45	
,,	9 19	9·45	
29	8 9	9·8	
Dec. 1	7 50	9·45	
,,	8 23	9·5	
,,	8 55	9·5	
,,	9 33	9·5	
2	9 26	9·3	
,,	9 39	9·3	
4	8 35	9·7	
,,	9 4	9·5	
,,	9 16	9·5	

1899.	C.M.T.	Mag.	
Dec. 6	8h 7m	9·6	
7	10 24	9·7	
8	7 53	9·6	
9	7 53	9·2	
,,	8 3	9·27	
,,	8 32	9·2	
13	9 30	9·3	
15	8 51	9·55	
16	13 56	9·9	
,,	14 46	9·92	
19	8 1	9·45	
,,	8 27	9·43	
,,	9 6	9·45	
20	8 49	9·25	
,,	9 9	9·2	
22	8 11	9·7	
,,	8 26	9·7	
24	8 15	9·85	
,,	8 47	9·6	
,,	10 32	9·2	
,,	10 47	9·3	
27	8 44	9·3	
1900.			
Jan. 2	8 24	9·45	
3	8 13	9·3	
,,	8 23	9·3	colour 4.
4	8 14	9·65	
,,	8 27	9·8	
,,	8 49	9·85	
5	8 7	9·55	clouds.
,,	8 9	9·5	,,
,,	8 37	9·6	
6	8 8	9·45	
,,	8 49	9·45	
,,	11 8	9·7	
,,	11 23	9·7	
,,	11 46	9·7	
,,	12 29	9·7	
,,	12 52	9·75	
,,	13 2	9·75	
7	9 9	9·2	
8	10 5	9·75	
9	9 41	9·65	

1900.	C.M.T.	Mag.	
Jan. 10	8h 18m	9·3	
12	9 2	9·65	
13	8 28	9·47	
14	7 56	9·25	
,,	8 14	9·3	
,,	8 40	9·3	
15	9 47	9·65	
Nov. 26	7 38	9·65	
,,	8 45	9·75	
30	7 46	9·6	
Dec. 1	7 44	9·25	
,,	7 55	9·3	
,,	8 29	9·3	
7	7 53	9·47	
,,	8 23	9·5	
12	8 0	9·33	
,,	8 7	9·3	
,,	8 19	9·25	
,,	8 48	9·2	
14	8 1	9·65	
16	8 55	9·75	
18	9 6	9·5	
26	7 49	9·3	
,,	8 12	9·25	
,,	9 48	9·25	
27	8 0	9·7	
28	8 15	9·5	
29	7 57	9·5	
,,	8 24	9·4	
,,	9 4	9·5	
,,	9 41	9·55	
30	9 6	9·2	
,,	9 11	9·2	
1901.			
Jan. 2	8 20	9·3	
8	8 15	9·6	
11	8 13	9·6	
Feb. 1	10 12	9·8	
9	9 19	9·75	
16	9 3	9·8	
19	7 54	9·9	
22	7 30	9·9	
,,	7 57	9·85	

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Cape Observations—*continued.*

1901.	C.M.T.	Mag.
Feb. 23	$7^h 33^m$	9·85
24	7 42	9·65
,,	7 55	9·6
,,	9 33	9·65
25	9 31	9·1
26	8 15	10·0
,,	10 9	10·05
27	10 12	9·95
Mar. 1	7 37	9·9
4	8 5	9·5
,,	8 22	9·5
5	9 55	10·0
6	9 34	9·9
9	8 33	9·8
,,	8 45	9·85

1901.	C.M.T.	Mag.
Mar. 10	$11^h 17^m$	[9·85]
13	7 14	9·9
,,	8 36	9·9
15	6 46	10·1
,,	7 59	10·0
17	10 46	9·8
18	9 16	9·6
,,	9 38	9·63
22	8 54	9·2
,,	9 38	9·3
23	7 13	10·0
25	7 31	9·35
,,	8 2	9·45
,,	8 39	9·5

1901.	C.M.T.	Mag.
Mar. 26	$7^h 56^m$	9·9
,,	8 28	10·0
27	7 18	9·8
29	8 17	9·65
30	7 15	9·95
,,	9 27	10·0
31	7 3	9·95
Apr. 2	9 13	9·8
4	7 46	9·8
6	7 44	9·95
7	6 33	9·75
,,	7 29	9·8
8	7 1	9·3
,,	7 40	9·3

1901.	C.M.T.	Mag.	
Apr. 11	$6^h 38^m$	9·7	
,,	7 41	9·7	
12	7 36	8·85	good.
13	7 26	9·9	
15	6 54	9·5	
,,	7 44	9·55	
16	7 57	9·9	
21	6 37	9·9	
23	6 55	9·95	
25	7 24	10·0	
27	6 46	10·0	
Aug. 9		9·5	
27		9·35	
,,		9·4	

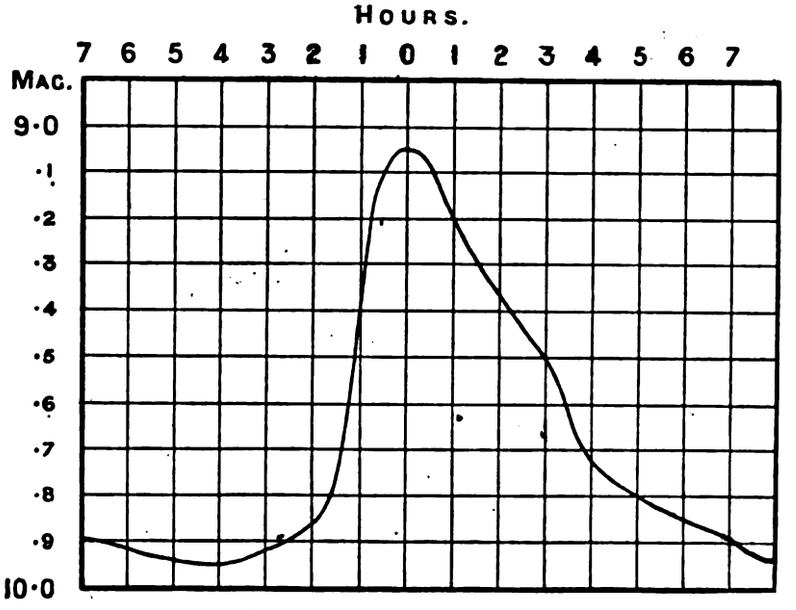
The investigation of the period of this star was somewhat troublesome. After many trials it was evident that a period of $13^h{\cdot}96$ was sufficient to suit any short collection of observations, but neither it nor any period about that duration would suit all the observations. Each month's observations were therefore reduced separately with the period of $13^h{\cdot}96$ and mean maxima derived therefrom. We thus got the following maxima, intervals from set to set and the resulting periods, viz. :—

	C.M.T.		Interval.	Period.	Remarks.
1899,	Mar. 17	$10^h{\cdot}0\pm$			These observations were very discordant.
,,	May 2	8 ·0	$1102^h{\cdot}0\pm$	$13^h{\cdot}949_{79}$	
,,	Nov. 18	8 ·0	4800 ·0	13 ·953$_{344}$	343 periods give $13^h{\cdot}994$.
,,	Dec. 13	9 ·0	601 ·0	13 ·977$_{43}$	44 ,, ,, 13 ·659.
1900,	Jan. 7	8 ·3	599 ·3	13 ·937$_{43}$	
,,	Dec. 12	8 ·7	8136 ·4	13 ·956$_{583}$	582 periods give $13^h{\cdot}980$ and 584 periods give $13^h{\cdot}932$.
1901,	Jan. 2	6 ·5	501 ·8	13 ·939$_{36}$	
,,	Feb. 16	1 ·0	1073 ·5	13 ·942$_{77}$	
,,	Mar. 15	9 ·0	656 ·0	13 ·958$_{47}$	
,,	Apr. 12	7 ·8	670 ·8	13 ·975$_{48}$	
		Total	$18140^h{\cdot}8$	$13^h{\cdot}9545_{1300}$	

The small numbers attached to the periods indicate the assumed number of maxima used in finding the period. It would seem that the only case of doubt is the number of maxima in the interval of $8136^h{\cdot}4$—but the number chosen (583) is very probably correct.

If, with the periods depending on the multiples between 36 and 79, an alteration of one hour in the time of the maximum is assumed, it will bring all the derived periods close to the mean period of $13^h{\cdot}9545$, but as stated before, this will not suit all observations at considerable intervals, as it brings some maxima to the time of minima, equal to an error of perhaps 2 hours in time. It is therefore certain that the period is not quite constant. This is most clearly indicated by the observations of 1900, Dec.–1901, Mar., wherein the period increases by gradations from $13^h{\cdot}939$ to $13^h{\cdot}975$.

The form of the light-curve is quite similar to that of other short period variables, it has been plotted on the following diagram.



Light Curve of 1752 U LEPORIS.

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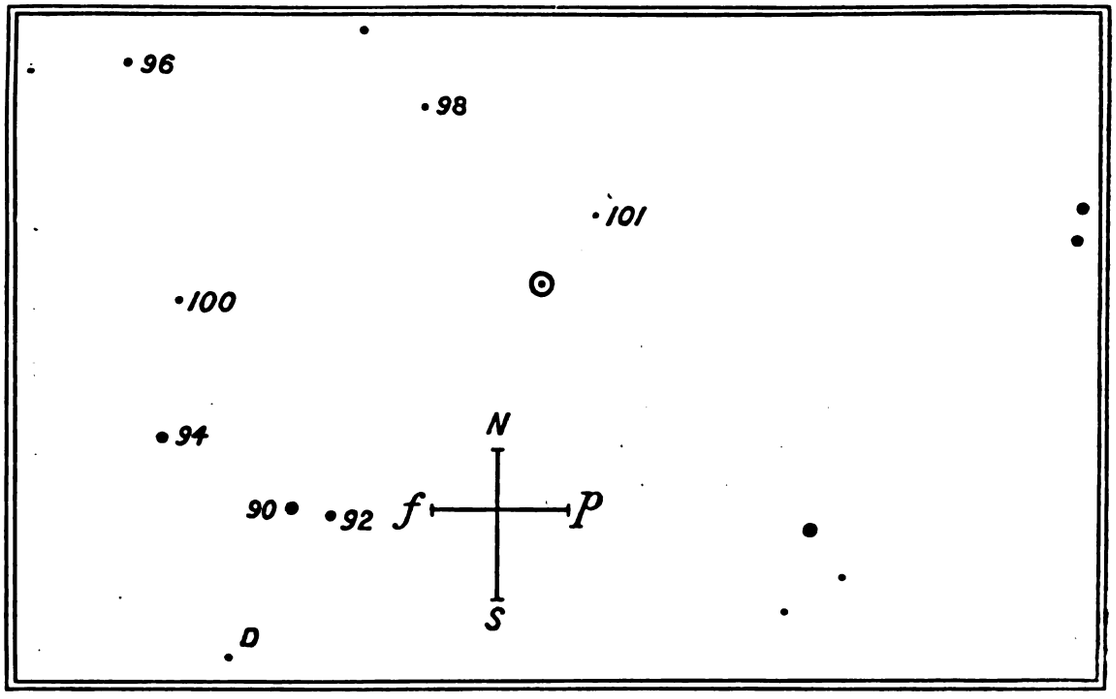
Thus we have :—

			Mag.				Mag.
Before Maximum		7^h	9·89	After Maximum		1^h	9·19
,,	,,	6	9·92	,,	,,	2	9·36
,,	,,	5	9·94	,,	,,	3	9·50
,,	,,	4	9·95	,,	,,	4	9·72
,,	,,	3	9·92	,,	,,	5	9·80
,,	,,	2	9·87	,,	,,	6	9·85
,,	,,	1	9·40	,,	,,	7	9·89
At	,,	0	9·05				

The mean elements are :—

Range :— $9^m{\cdot}05$ to $9^m{\cdot}95$.
Mean Period $13^h\ 57^m\ 16^s{\cdot}2 = 0^d{\cdot}58144$.
Mean Maximum 1900, Jan. $0^d\ 8^h$ G.M.T.
J.D. $2415020^d\ 8$,,
Maximum—Minimum $4^h{\cdot}0$.

The comparison stars used in the study of this variable star will be found on the following map. It will be remarked that any change in their assumed magnitudes will profoundly modify the star's light curve.



NOTE :—The magnitudes of the comparison stars have been multiplied by 10.
The crossbars are :—From N. to S. = 5′ in Dec.
,, *p.* to *f.* = 20 secs. in R.A.

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1803. T LEPORIS.

B.D. – 22° No. 995. Cor. D.M. – 22° No. 1987.

	R.A.	Dec.
1875.	$4^h\ 59^m\ 31^s$	– 22° 4′·4.
1900.	**5 0 35**	**– 22 2 ·4.**

This star is No. 2 of List II., C.P.D. Vol. I. p. (83), and No. 54 of List II. *bis.* C.P.D. Vol. III. p. 73, where Kapteyn remarks: "On measuring plate certainly missing. On check plate perhaps an extremely faint star." The star was definitively announced as variable by Mrs Fleming in the *Astr. Nach.* No. 3299, 1895, July 6. Visual confirmation was furnished by Mr H. M. Paul of Washington in the *Astr. Journ.*, No. 358 of 1895, Nov. 13. Observations by Mr H. M. Parkhurst will be found in the *Astr. Journ.* No. 377, 1896, June 13. Cape results will be found in the *Astr. Nach.* No. 3426 of 1897 June 2, and the *Astr. Journ.* Nos. 442 and 468 of 1898 Aug. 22, and 1899 Aug. 29. These are all repeated below.

We find:—

		Julian Day.	Mag.
Schönfeld,	187–		8·7
Cordoba,	1886, Oct. 27	2410207	8·75
,,	1887, Nov. 15	591	9·0
Harvard,	1889, ,, 4	1311	9·2
,,	,, ,, 17	1324	8·4
,,	1890, Feb. 3	1402	9·4
,,	,, Sept. 19	1630	10·5
,,	,, ,, ,,	,,	10·3
,,	,, Dec. 29	1731	8·4
,,	1891, Jan. 26	1759	9·4
,,	1893, Nov. 18	2786	8·2
,,	1894, Sept. 14	3086	10·4
,,	,, Oct. 24	3126	9·0
,,	1895, Mar. 5	3258	10·9
,,	,, ,, 9	3262	10·8

		Julian Day.	Mag.	
Harvard,	1895, Mar. 16	2413269	10·8	
H. M. Paul,	,, Sept. 4	3441	8·9:	Star quite red.
,,	,, ,, 16	3453	8·9	
,,	,, ,, 19	3456	8·9	
,,	,, Oct. 2	3469	8·6:	
,,	,, ,, 17	3484	8·5	
,,	,, ,, 23	3490	8·3	
,,	,, ,, 26	3493	8·2	
,,	,, ,, 30	3497	8·1	
H. M. Parkhurst,	1896, Jan. 4	3563	9·0	
,,	,, ,, 15	3574	9·42	
,,	,, Feb. 10	3600	9·6	
,,	,, ,, 11	3601	9·96	
,,	,, Mar. 5	3624	10·52	

From the observations by Paul and Parkhurst, the latter assigns as date of a maximum:—

1895, Nov. 13 = J.D. 2413511.

In Chandler's 3rd Catalogue, we find for maxima:—

1889, Dec. 6 = J.D. 2411343 + 360^d E. ?

The Cape observations are:—

1897.	Julian Day.	Mag.	Colour.
Feb. 4	2413960	9·2	8.
,, 15	3971	9·6	9.
,, 23	3979	9·6	
Mar. 3	3987	9·8	
,, 9	3993	9·9	red.
,, 14	3998	9·9	
,, 18	4002	9·8	
,, 20	4004	9·9	
,, 25	4009	9·8	
,, 31	4015	9·9	
Apr. 3	4018	10·2	
,, 7	4022	9·95	
,, 10	4025	10·0	
,, 13	4028	10·5	
,, 20	4035	10·5	
,, 23	4038	10·5	
May 4	4049	11·0	
Oct. 23	4221	9·0	6.
Nov. 12	4241	8·6	
,, 24	4253	8·5	8.
Dec. 2	4261	8·3	8.

1897.	Julian Day.	Mag.	Colour.
Dec. 10	2414269	8·3	8·5.
,, 13	4272	8·4	8·5.
,, 18	4277	8·5	9.
,, 28	4287	8·7	9.
1898.			
Jan. 7	4297	8·7	8·5.
Feb. 9	4330	9·0	very red.
,, 22	4343	9·1	9.
,, 28	4349	9·3	
Mar. 9	4358	9·4	
,, 13	4362	9·5	
,, 18	4367	9·5	
,, 23	4372	9·6	
,, 31	4380	9·9	
Apr. 4	4384	9·6	
,, 12	4392	9·9	
,, 20	4400	9·95	
,, 23	4403	10·0	
,, 26	4406	10·5	
,, 29	4409	10·2	

1898.	Julian Day.	Mag.	Colour.
May 3	2414413	10·5	
,, 7	4417	10·7	
,, 16	4426	10·5	
,, 18	4428	11·0	good.
,, 26	4436	glimpsed ?	
Aug. 24	4526	9·0	
Nov. 1	4595	8·3	7.
,, 12	4606	7·7 ±	
,, 29	4623	8·0 ±	7.
Dec. 4	4628	8·0	red.
,, 20	4644	8·2	7.
1899.			
Jan. 6	4661	[8·3]	
Feb. 26	4712	10·0	
Mar. 15	4729	10·5	
Apr. 29	4774	inv.	
May 4	4779	12·0	glimpsed.
,, 10	4785	inv.	
Aug. 27	4894	9·25	
Oct. 3	4931	9·0	

1899.	Julian Day.	Mag.	Colour.
Oct. 13	2414941	8·5	
,, 28	4956	8·4	7·5.
Nov. 2	4961	8·5	red.
,, 7	4966	8·2	
,, 10	4969	7·95	7.
,, 11	4970	8·0	7.
,, 18	4977	8·0 ±	
,, 21	4980	8·4	8.
,, 26	4985	8·5	
,, 28	4987	8·3	8.
Dec. 1	4990	8·3	
,, 4	4993	8·3 ±	
,, 16	5005	8·6	
,, 20	5009	8·7	
,, 24	5013	8·9	8.
,, 27	5016	9·0	
1900.			
Jan. 3	5023	9·0	
,, 6	5026	9·05	
,, 14	5034	9·2	

The colour observations yield:—

Magnitude.	Mean Colour.	
7·5–7·9	7·5	1 obs.
8·0–8·4	7·6	10 ,,
8·5–8·9	8·5	5 ,,
9·0–9·4	7·7	3 ,,
9·5–9·9	9·0	1 ,,
Mean	7·9	20 obs.

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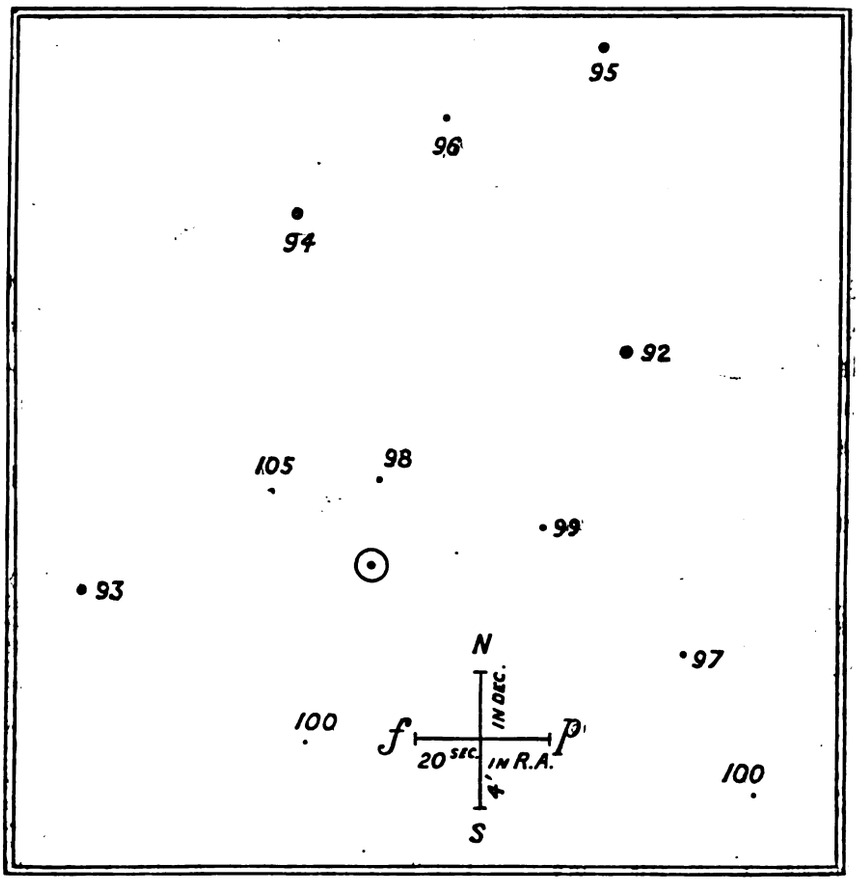
The comparison stars used are shewn on the map.

When T Leporis was brighter than 9·0 mag. or fainter than 10·5 mag., a mental and therefore uncertain standard was adopted.



NOTE.—The magnitudes of the stars have been multiplied by 10.

The Cape observations are plotted on the diagram on p. 43B.

From all the observations the following dates of maxima have been estimated together with their estimated *a priori* limits of error; the column C results from the formula :—

J.D. 2410212·0 + 366d·5 E.

Observation. d	d	C. d	O—C. d	Observation. d	d	C. d	O—C. d
2410207 ±	50	2410212·0	− 5·0	2413500 ±	5	2413510·5	−10·5
1324	10	1311·5	+12·5	4256	3	4243·5	+12·5
1731	10	1678·0	+53·0	4610	3	4610·0	0·0
2786	10	2777·5	+ 8·5	4972	3	4976·5	− 4·5
3126	20	3144·0	−18·0				

It might be possible to find a somewhat better representation of the observations, but a corresponding increase in accuracy of the period would not be attained. The dates and observations made by Schönfeld at Bonn, would somewhat increase the accuracy of the period.

We have :—

Magnitude at maxima	7·7–8·3.
,, ,, minima	12·0 ?
Minimum to maximum	164d ± 10d.
Period	366·5 ± 0d·7.

The photographic magnitudes recorded by Harvard are, considering the redness of the star, very bright. This is perhaps due to the bright hydrogen lines found in the spectrum by Mrs Fleming.

Comparison :—

Name	Colour	Range of Mag.			Period	M—m.
1803 T Leporis	7·8	7·7–8·3	to	12·0 ?	366d·5	164d.
419 U Andromedæ	6	8·9	,,	<13·	365 · ?	...
1623 T Camelopardalis	6	7·0–8·2	,,	<12·	370 ·	175
2530 V Canis Minoris	—	10·3	,,	<13·7	364 ·	...
5501 S Serpentis	4·1	7·6–8·7	,,	12·5 ?	365 ·4	...

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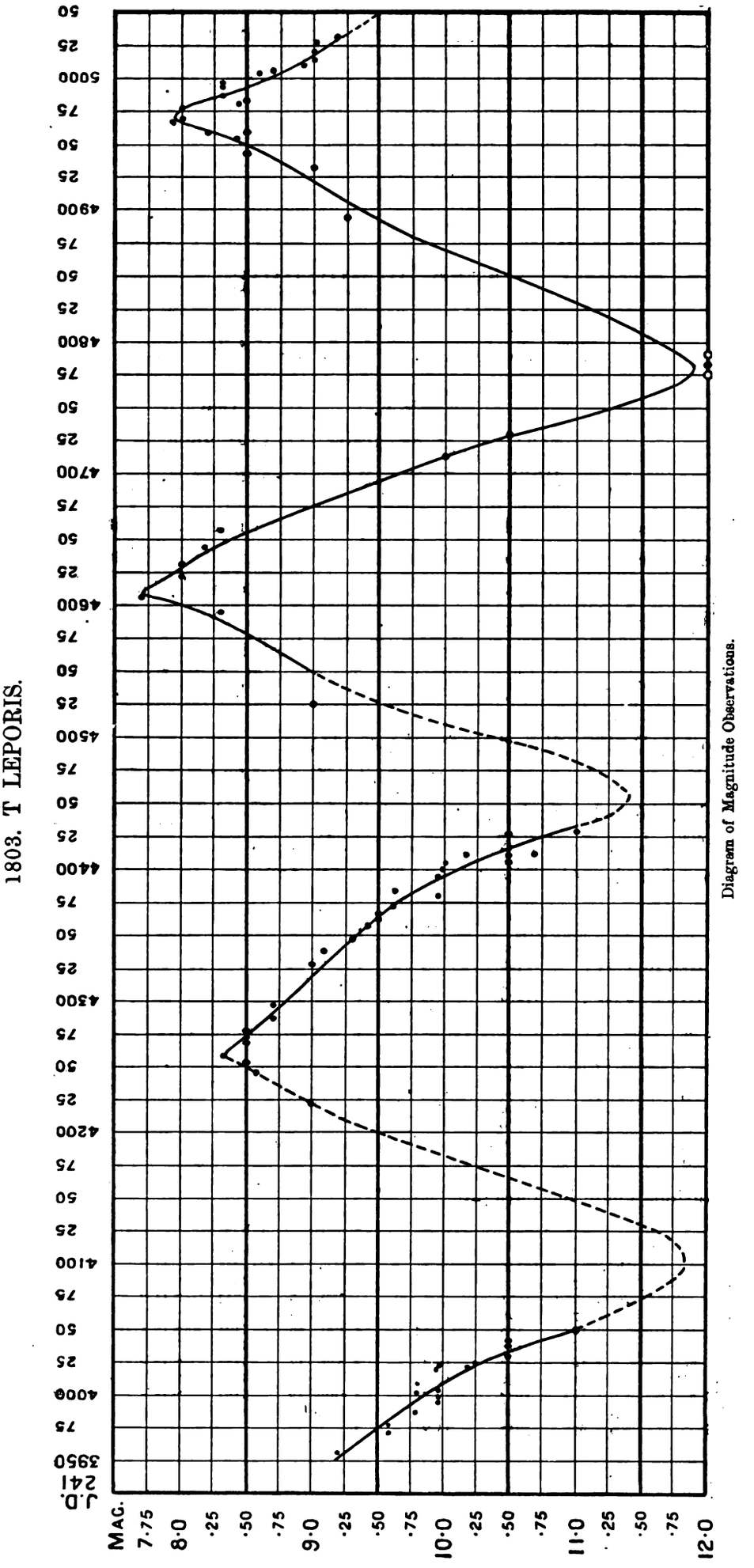

Diagram of Magnitude Observations.

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1850. S PICTORIS.

C.Z. 5^h No. 283. C.P.D.—48° No. 609.

	R.A.	Dec.
1875.	$5^h\ 7^m\ 38^s{\cdot}1$	−48° 39′·6.
1900.	**5 8 18·0**	**−48 37·7.**

In Kapteyn's list of Suspected Variable Stars—suspected on the evidence of the four C.P.D. plates quoted below. The star was searched for on plate 2439, and not found. Plates 2439 and 2528A were examined under a microscope, and no defects in the films or images could be detected. The variability of the star was first announced, however, by Mrs Fleming in the *Astr. Nach.*, No. 3299 of 1895, July 6, from photographs taken at Arequipa, the star having a spectrum of the third type with bright hydrogen lines; and its variability was at once suspected from this peculiarity. Professor E. C. Pickering verified the variability from an examination of 16 photographs.

In his third catalogue, Dr Chandler gives for the maxima,

1894, Nov. 5, J.D. 2413138 + 410^d E ?

and in *Astr. Journ.* No. 468, 1899, Aug. 29, some data are given, suggesting a period of 423 days, which is altered to $428^d \pm 5^d$ in *Astr. Journ.*, No. 487 of 1900, Dec. 13.

All the observations found are as follows :—

		Julian Day.	Mag.
Cordoba,	1873, Dec. 29	2405522	9·5
C.P.D., plate 954,	1887, Nov. 22	10598	9·0
,, ,, 980,	,, ,, 29	10605	9·0
Harvard,	1889, Sept. 26	11272	<10·8
,,	,, ,, ,,	,,	<11·1
,,	,, Oct. 8	11284	<11·8
,,	,, Nov. 6	11313	<12·7
C.P.D., plate 2439,	,, Dec. 24	11361	<10·6
,, ,, 2528A,	1890, Feb. 19	11418	9·1
Harvard,	,, Sept. 23	11634	<13·2
,,	1891, Oct. 24	12030	<13·3
,,	,, Nov 23	12060	<11·4
,,	1892, Sept. 28	12370	11·5
,,	,, Oct. 6	12378	12·0
Harvard,	1892, Dec. 8	2412441	<13·3
C. du Ciel, plate 996,	1893, Jan. 12	12476	<11·0
Harvard,	,, Sept. 27	12734	10·6
,,	,, ,, ,,	,,	10·6
,,	,, Nov. 18	12786	11·4
C. du Ciel, plate 2302,	,, Dec. 8	12806	10·4
Harvard,	1894, Sept. 14	13086	11·3
,,	,, ,, 19	13091	11·0
,,	,, Nov. 5	13138	8·6
Cordoba D.M.,	,, ,, 26	13159	8·0
Chart plate,	1895, ,, 19	13517	12· ±
Cordoba D.M.,	1896, Feb. 14	13604	9·0
,,	,, Mar. 17	13636	9·7
,,	1898, ,, 24	14373	10·0

The visual observations made here are :—

1899.	Julian Day.	Mag.	Colour.
Feb. 3	2414689	inv.	
,, 26	4712	,,	
Mar. 19	4733	,,	
Apr. 23	4768	,,	
May 12	4787	,,	
,, 31	4806	,,	
Aug. 27	4894	8·3	6.
Sept. 30	4928	9·1	7·5.
Oct. 3	4931	9·25	8.
,, 10	4938	9·4	
,, 13	4941	9·45	

1899.	Julian Day.	Mag.	Colour.
Oct. 22	2414950	9·7	
,, 27	4955	9·7	
Nov. 2	4961	9·9	
,, 7	4966	9·8	
,, 11	4970	9·85	
,, 18	4977	10·0	
,, 28	4987	10·2	
Dec. 1	4990	10·3	
,, 16	5005	10·7	
,, 20	5009	11·0	
,, 24	5013	11·0	

1900.	Julian Day.	Mag.	Colour.
Jan. 3	2415023	11·0	
,, 14	5034	<10·1	
Feb. 2	5053	<11·0	
,, 26	5077	<11·5	
Mar. 22	5101	<10·4	
,, 31	5110	<11·0	
Apr. 17	5127	<12·0	
May 20	5160	<10·2	
June 20	5191	<10·6	
Aug. 13	5245	8·7	

1900.	Julian Day.	Mag.	Colour.
Sept. 1	2415264	8·0	
,, 13	5276	8·0	7.
Oct. 7	5300	7·9	5.
,, 20	5313	8·0	
,, 23	5316	8·1	6.
Nov. 1	5325	8·5	
,, 10	5334	8·6	
,, 23	5347	8·6	
Dec. 1	5355	8·8	red 8.
,, 7	5361	8·8	

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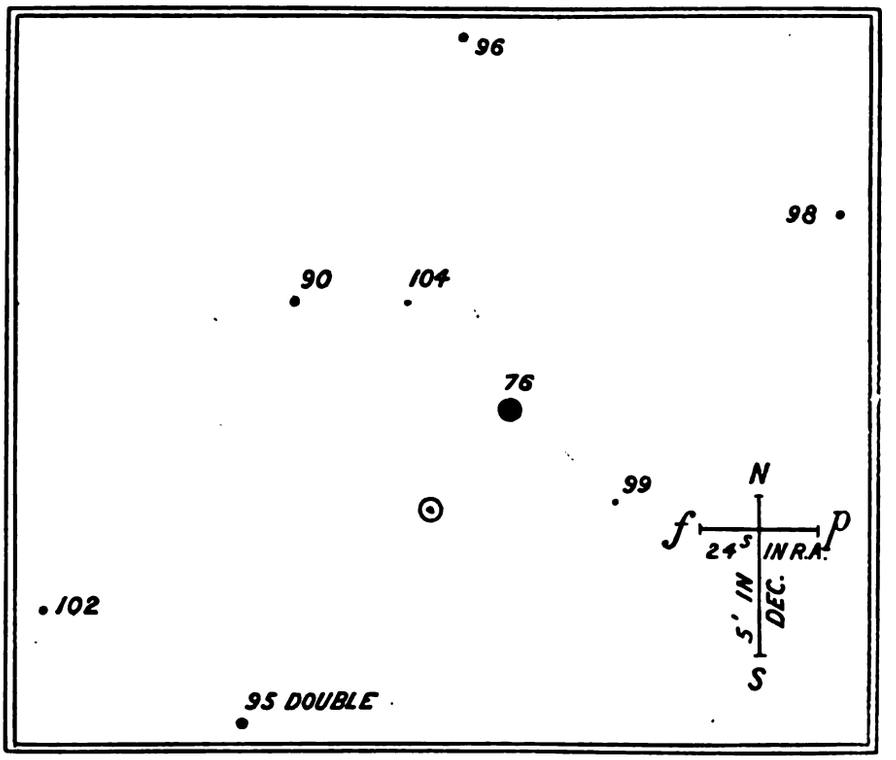
The colour observations yield :—

Mag.	Colour.	
> 8·5	6·0	4 observations.
< 8·5	7·8	3 ,,

If so few observations have any value, they would indicate a considerable lessening of the star's redness at maximum.

The map used in the above observations is given :—



NOTE.—The star-magnitudes have been multiplied by 10.

The observations available hardly call for a diagram. The following dates with their *a priori* uncertainties are suggested for maxima, and they have been compared with a mean maximum and period assumed as follows :—

1887, Nov. 1 J.D. $2410577^{d}+428^{d}$ E.

Maxima Observed. Julian Day.	Ditto Calculated. Julian Day.	O.—C.
d		d
2410580 ± 20	2410577	+ 3
1418 ± 25	1433	−15
3138 ± 10	3145	− 7
4880 ± 15	4857	+23
5280 ± 5	5285	− 5

The rise to maximum appears to be rapid. This variable star is well situated for, and requires regular observation with a powerful telescope. In the 7-inch refractor it is invisible for 5 or 6 months at a time.

Since the above was written, Dr Roberts's elements have been published and a comparison yields :—

	Range.	Maxima.
	m m	d
Roberts :	8·2 to < 12·0 ?	J.D. 2415305 + 428·5 E.
Cape :	7·9 ,, < 13·3 ?	2415285 + 428·0 E.

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There are several variables with periods nearly equal to that of S Pictoris, *e.g.*:—

		Range. mag.		Colour.	M—m. d	Period. d
1850	S Pictoris	8·0—	12·5 ?	6·9	...	428·0
659	X Cassiopeiæ	9·4—	12·0	6·	149	420· ?
1771	R Leporis	6–7—	8·5 ?	9·4	212	436·1
4826	R Hydræ	3·5 / 5·5 —	9 7	5·9	190	425·2
6894	S Lyræ	9·0—	12·0	...	...	436· ?
7045	R Cygni	5·9 / 8·0 —	< 14·0	6·0	150	425·7
7428	V ,,	6·8 / 9·5 —	13·5	8·3	220	418·
8600	R Cassiopeiæ	4·8 / 7·0 —	9·7 / 12·0	6·5	188	429·5

2565. R VOLANTIS.

Gilliss P.Z. No. 4619.

	R.A.	Dec.
1875.	$7^h\ 7^m\ 53^s$	—72° 48′·9.
1900.	**7 7 26**	**—72 51 ·3.**

Not found in the C.P.D., see List I. No. 502 in Vol. III. of that work, p. 58. According to Professor Kapteyn, it is missing on both the measuring and the check plates. It is about 2′ S *f.*, Gilliss P.Z. No. 4616. Gilliss, who observed both stars, remarked :—

No. 4616	8·2	blue and nebulous.	(2 nights.)
4619	8·0	red and sharply defined.	(1 night.)

In the 7-inch refractor No. 4616 is estimated about $7^m\cdot5$, and is a yellow star (say colour 4·0). But if the eye-piece is adjusted for a very red star, which is close to another star, the contrast might well cause the latter to appear bluish—and from being out of focus—nebulous as well. Anyhow, with the 7-inch refractor, both stars are well defined without any trace of nebulosity.

A very few observations proved that Gilliss P.Z. No. 4619 is variable. A notice conveying the above statements appeared in the *Astr. Journ.*, No. 468 of Aug. 29, 1899.

The observations found are :—

Gilliss :—1851·06 = 1851, Jan. 22 ± Julian Day. 2397145 ± Mag. 8·0 Colour. red.

Cape :—

1899.	Julian Day.	Mag.	Colour.
Jan. 13	2414668	10·6	
,, 19	4674	10·7	
Feb. 4	4690	11·0	
,, 10	4696	10·3	
,, 17	4703	9·8	
,, 26	4712	9·9	
Mar. 4	4718	10·0	red.
,, 17	4731	9·9	although so faint, can see it is intensely red.
,, 21	4735	9·6	very red.
Apr. 23	4768	9·6	,,
,, 28	4773	9·6	
May 2	4777	9·6	red 9.
,, 10	4785	9·5	,, 9.
,, 14	4789	9·5	
,, 19	4794	9·4	
,, 25	4800	9·35	red 9.

Cape :—

1899.	Julian Day.	Mag.	Colour.
May 31	2414806	9·65	
June 3	4809	9·55	
,, 7	4813	9·55	red 9.
,, 10	4816	9·6	
Aug. 27	4894	9·7	
Sept. 30	4928	9·9	red 9.
Oct. 13	4941	10·1	
,, 25	4953	10·2	red.
Nov. 2	4961	11·0 good.	
,, 11	4970	10·5	
,, 21	4980	11·0 good.	
,, 28	4987	11·7	
Dec. 1	4990	11·0	
,, 4	4993	10·6	
,, 13	5002	10·8 ±	
,, 20	5009	11·5	
1900.			
Jan. 1	5021	12·0	
,, 6	5026	11·7	

Cape :—

1900.	Julian Day.	Mag.	Colour.
Jan. 17	2415037	11·5	
,, 27	5047	11·8	
Feb. 8	5059	10·7	
,, 20	5071	11·0	
,, 25	5076	10·2	
Mar. 8	5087	10·3	
,, 10	5089	10·0	
,, 16	5095	10·0	
,, 22	5101	9·95	
,, 27	5106	9·85	red 9.
,, 31	5110	10·0	
Apr. 7	5117	10·5	
,, 16	5126	9·7	
,, 18	5128	9·9	
,, 21	5131	10·0	
,, 28	5138	9·9	red.
May 3	5143	9·9	
,, 6	5146	9·9	red 9.
,, 15	5155	9·9	,,

Cape :—

1900.	Julian Day.	Mag.	Colour.
May 24	2415164	9·7	red 9.
,, 26	5166	9·5	
July 8	5209	9·3	
,, 24	5225	9·25	red 9.
Aug. 1	5233	8·7	,, 9.
,, 3	5235	8·95	
,, 7	5239	8·3	red 9.
,, 13	5245	8·7	,, 8.
Sept. 4	5267	9·05	,, 8.
,, 13	5276	8·5	,, 9.
Oct. 20	5313	9·2	,, 9.
Nov. 2	5326	9·3	,, 9.
,, 10	5334	9·3	,, 9.
,, 13	5337	9·3	,, 9.
,, 26	5350	9·25	,, 9.
Dec. 1	5355	9·25	,, 9.
,, 12	5366	9·7	
,, 14	5368	9·9	
,, 16	5370	9·7	red 9.

Colour when brighter than $9^m\cdot0 = 8\cdot8$.
,, ,, fainter ,, ,, = 9·0.

This star is one of the reddest in the heavens, resembling R Fornacis.

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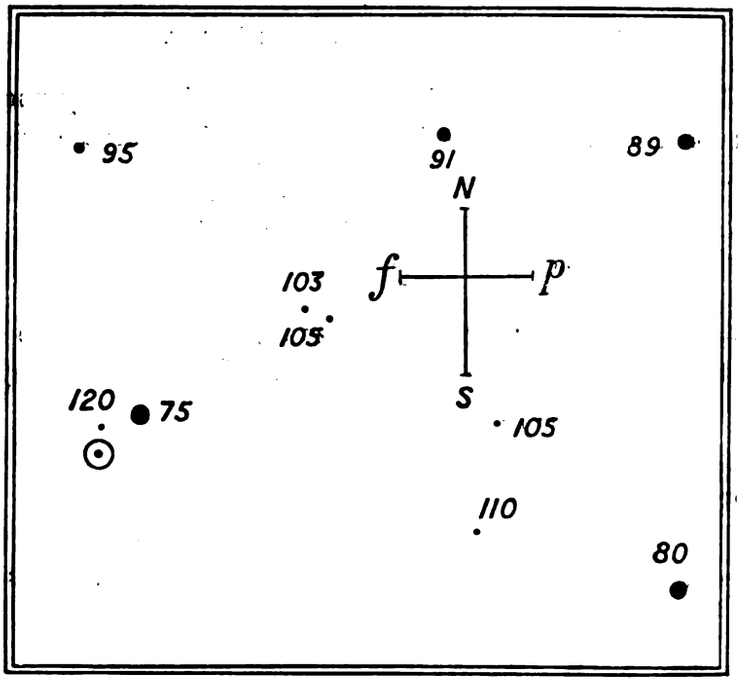
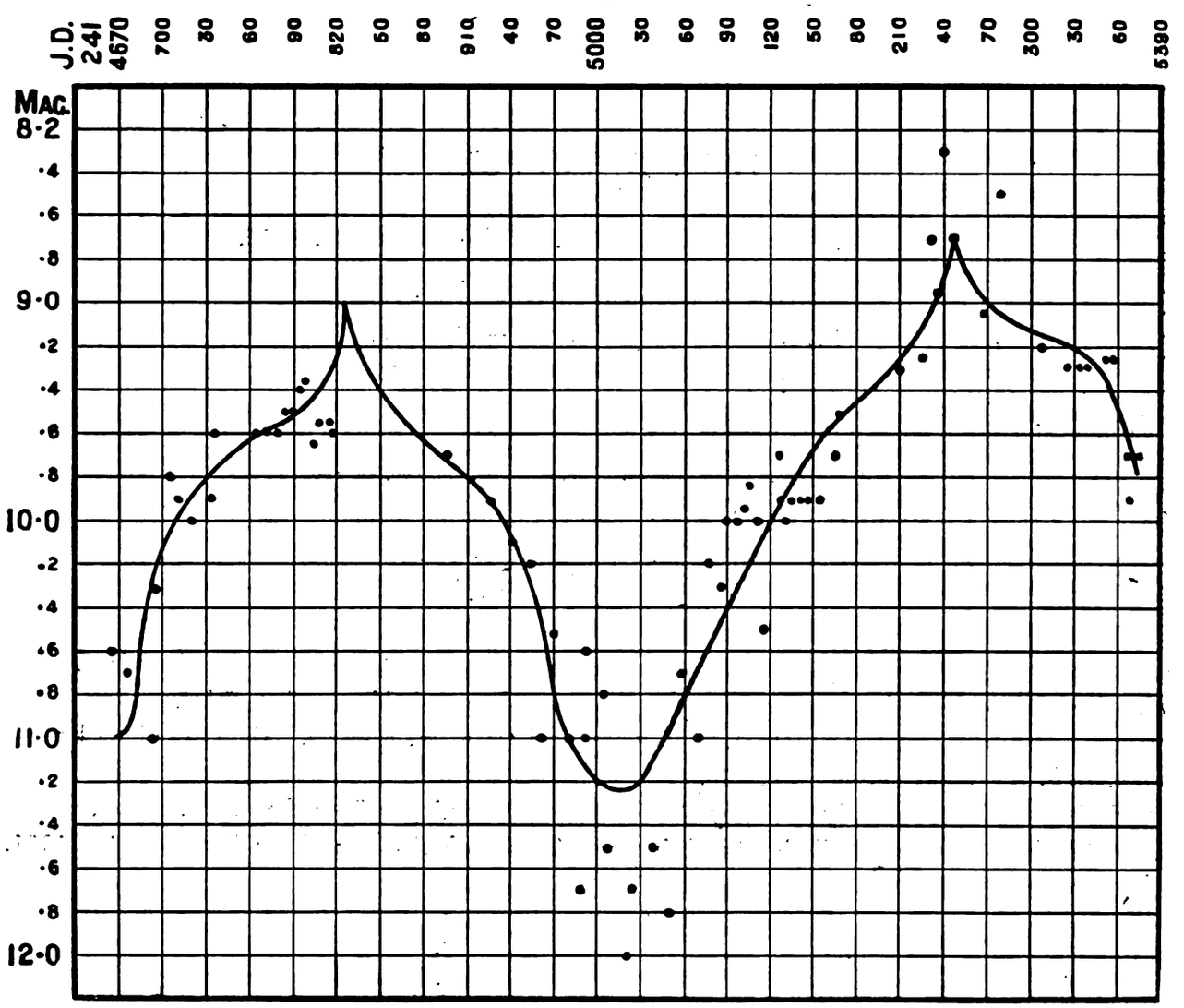
The comparison stars will be found on the map.



The cross-bars are 5′ in Dec. and 1$^{min.}$ in R.A.
The magnitudes have been multiplied by 10.

The observations have been plotted on the following diagram :—



Magnitude Curve of 2565. R VOLANTIS.

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The colour of this variable renders the determination of its magnitude very uncertain, hence, perhaps, the peculiar shape of the curve at maximum. Several other equally plausible curves could be drawn.

The observations give :—

Maximum	J.D. 2414830	Mag. 9·0 ±.
Minimum	5015	,, 11·5
Maximum	5245	,, 8·7
M—m	= 230 days	
Period	= 415 ,,	

It is unusual to find M—m more than half the period, so that these figures are to be considered uncertain. Since the date of observation by Gilliss, to the maximum on J.D. 2415245, 18100 days have elapsed.

This interval divided by 42, 43 and 44, gives respectively :—

431^d, 421^d and 411^d.

For the present, I am inclined to write :—

Maxima = (1851, Jan. 22 = J.D. 2397145) + 421^d E.

noting, however, that it is quite possible that the period is as long as 440^d. This interesting star will repay further study.

2583. L_2 PUPPIS.

Piazzi, VII. No. 55. Lac. 2691. Cape 1880, No. 3505.

	R.A.	Dec.
1875.	$7^h\ 9^m\ 43^s{\cdot}5$.	$-44°\ 26'{\cdot}2$.
1900.	**7 10 29 ·1.**	**−44 28 ·6.**

This variable star has a large proper motion, viz.

R.A. $+0^s{\cdot}009$. Dec. $+0''{\cdot}35$. (J. G. Porter. Cin. Pub. No. 12).

Dr Chandler's third Catalogue of Variable Stars gives the following elements :—

Range of Magnitude :— 3·5 to 6·3.
Colour :— B.
Maxima :—1872 Mar. 20, J.D. 2404873+$140^d{\cdot}0$ E.
M.—m. 69^d.

The discovery of the variability of L_2 Puppis is recorded on pp. 278–279 of Dr Gould's *Uranometria Argentina*. He remarks that the star is red in all its stages and remarkably so when faint.

The star has also been watched by Mr A. S. Williams and Dr A. W. Roberts. Data are given by the latter in the *Journ. Brit. Astr. Assocn.* vol. 2 p. 333.

The variation was independently noted by Miss Reitsma of Groningen from the C.P.D. Plates.

Dr Roberts's latest elements will be found in the *Astronomical Journal* for February 16, 1901, Nos. 491–2.

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2690. Z PUPPIS.

Lalande 14755. In no other catalogue.

	R.A.	Dec.
1875.	$7^h\ 27^m\ 12^s$	$-20°\ 23'{\cdot}5$.
1900.	**7 28 18**	**−20 26 ·7.**

The variability of this star was announced by Mr Arthur C. Perry in the *Astr. Journals*, Nos. 398 and 428 (1897, Mar. 16 and 1898, Feb. 19) and confirmed by Mr H. M. Parkhurst in the latter number.

These papers were overlooked when I penned the following lines in November 1899 which appeared in the *Astr. Journ.* No. 485 (1900, Nov. 14):—

This star was looked for by Argelander and not found. He writes in the 7th volume of the *Bonn Observations*, p. 205: "Zu verschiedenen Zeiten vergebens gesucht. Vergleicht man die Stelle mit meiner Zone 284, so finden sich alle übrigen an beiden Orten gemeinschaftlich, nur der fragliche Stern fehlt bei mir, während ich unter No. 163 einen Stern 8^m habe, der bei Lalande fehlt. Beide würden übereinkommen wenn man bei Lalande läse F2 23 31 st 23 21 und Z.D. 69 15 50 st 69 0 50. Bei der Eile, mit der beobachtet wurde, scheint mir diese Correctur nicht ganz unwahrscheinlich."

These assumptions were adopted at the Paris Observatory, and we find in the Paris Catalogue, No. 9309 Lal. 14755,

			Paris–Lalande
$\alpha = 7^h\ 27^m\ 21^s{\cdot}43$,	$\delta = -20°\ 38'\ 38''{\cdot}6$		$+0^s{\cdot}18$ $-8''{\cdot}4$

In spite of the excellence of this agreement I venture to point out that it is incorrect.

We have for 1875:

	Mag.	α	δ	
Lalande 14755	—	$7^h\ 27^m\ 11^s{\cdot}8$	$-20°\ 23'{\cdot}4$	From B.A.C. edition.
S.DM.—20°2007	10	7 27 13·1	−20 23·9	
Kapteyn C.P.D.—20° 2569	9·9	7 27 12·6	−20 23·3	

Schönfeld gives no reference, but Kapteyn identifies the C.P.D. star both with Lalande and D.M.—20° 2007. Whilst making a map for the variable star 2690 X Puppis, I was struck by the faintness of the C.P.D. star identified as Lalande's, and at once assumed it must be variable. At the telescope I found that the small scale of my map and the large number of faint stars thereabouts made identification a little difficult. I therefore made a larger map from the sky on the 19th June, 1899. Professor Kapteyn had also considered the Lalande star as a probable variable, as it is contained in a valuable series of "Suspected Variables" which he transmitted to Dr Gill in 1899, and which reached the Cape on the 30th of August.

My observations now enable me to say that the star of the DM. and C.P.D. is not the star observed by Lalande. Lalande's star is about 15″ or 20″ S. *pr.* the C.P.D. star, and this is not inconsistent with the positions above quoted.

Sometime in Feb.–Mar. 1899 I noted a $10^m{\cdot}5$ star S. *pr.* the C.P.D. star. This star was invisible in June when I made the new map, but on the 30th Sept. I saw it again; in fine, the observations stand thus, taking the C.P.D. star as $= 9^m{\cdot}9$.

	Mag.			Mag.
1899 (Feb.–Mar.)	(10·4)		1899 Nov. 11	9·85
June–Aug.	inv.	3 obs.	12	9·85
Sept. 30	11·5		18	9·7
Oct. 27	seen		21	9·5

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It is therefore beyond doubt that this is Lalande 14755, and that it is variable. It is very remarkable that this is one of the few stars for which Lalande gives no magnitude. . . . . .

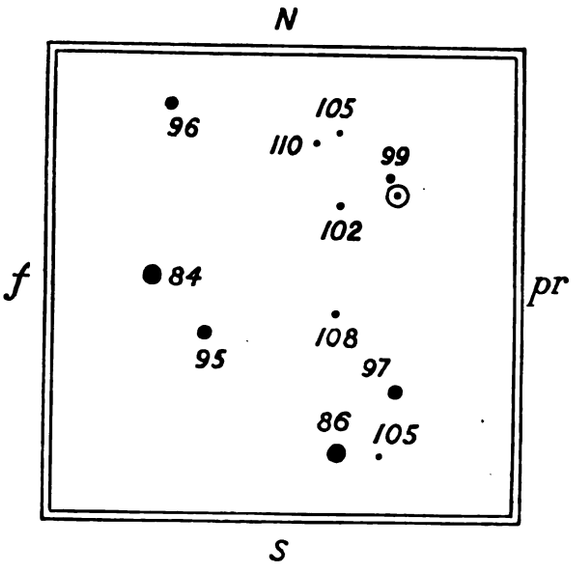
It is well in this connection to recall the circumstances attending the star Ö.A. 21384. Professor Weiss writes, "An dieser Stelle in Wien wiederholt vergeblich gesucht. Wohl blos der folgende Stern mit Doppelfehler: In A.R. um 1^s zu klein und Mikr. zu lesen 9° 44′ statt 8° 54′. Die Position wäre dann für 1850·0: $\alpha = 21^h\ 17^m\ 50^s{\cdot}22$, $\delta = -\ 29°\ 39'\ 15''{\cdot}3$" (*Weiss's Argelander*, pp. 500–1).

These corrections make the star identical with Ö.A. 21385, $\alpha = 21^h\ 17^m\ 50^s{\cdot}65$, $\delta = -29°\ 39'\ 14''{\cdot}6$.

Nevertheless Ö.A. 21384 really exists in Argelander's uncorrected position. It is the variable star S Microscopii.

Great caution is thus evidently required in assuming errors. (Thus far from the *Astr. Journ*).

The map used is given herewith.



The magnitudes have been multiplied by ten.
The map is approximately $50^{secs.}$ in R.A. and 11′ in Dec.
(A portion of this map on a smaller scale will be found under X Puppis page 53 B).

The observations found are as follows:—

Astr. Journ. No. 441 (Parkhurst H.M. and Perry).
[Note: the decimal of a Julian Day is given in the *Astr. Journ.* Parkhurst's mags. are given to 2 decimals, Perry's to 1.]

	Julian Day.	Mag.
1897, Mar. 4	2413989	8·3
,, ,, 7	3991	8·21
,, ,, 7	3992	8·3
,, ,, 10	3994	8·45
,, ,, 10	3994	8·3
,, ,, 12	3996	8·35
,, ,, 14	3999	8·13
,, ,, 21	4005	8·3
,, ,, 21	4006	8·3
,, ,, 26	4011	8·4
,, ,, 28	4012	8·77
,, ,, 29	4013	8·74
,, ,, 30	4015	8·6
,, Apr. 1	4017	8·6
,, ,, 11	4026	8·62
,, ,, 11	4026	8·6
,, ,, 17	4032	8·40
,, ,, 17	4032	8·6
,, ,, 19	4034	8·6

	Julian Day.	Mag.	
1898, Feb. 9	2414331	10·62	These would seem to be observations of the N. *f.* star = B.D. −20°2007. (R.T.A.I.)
,, ,, 10	4332	10·09	
,, ,, 12	4333	10·7	
,, ,, 12	4334	11·13	
,, ,, 13	4335	11·1	
,, ,, 14	4335	10·78	
,, ,, 24	4345	10·5	
,, ,, 24	4346	10·9	
,, ,, 26	4347	11·10	
,, ,, 26	4348	10·9	
,, Mar. 9	4358	10·7	
,, ,, 9	4359	10·51	
,, ,, 14	4364	10·8	
,, ,, 16	4365	10·89	
,, ,, 25	4375	10·7	
,, ,, 31	4380	10·76	
,, Apr. 8	4389	10·7	
,, ,, 13	4393	10·98	

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			Julian Day.	Mag.	
Astr. Journ. No. 468,	1898, Dec.	14	2414639	[10·00]	It is still uncertain if these obs. appertain to the variable star.
	,, ,,	16	4641	10·2	
	,, ,,	18	4643	10·10	
	1899, Jan.	7	4663	9·61	
	,, ,,	14	4670	10·06	
	,, ,,	18	4674	10·04	
	,, Feb.	4	4690	9·8	
	,, ,,	14	4700	10·47	
	,, Mar.	1	4716	10·45	
	,, ,,	16	4730	10·54	
	,, Apr.	2	4747	10·45	
	,, ,,	3	4749	10·2	
	,, ,,	29	4775	[10·00]	

			Julian Day.	Mag.
Astr. Journ. No. 487,	1899. Nov.	6	2414965	10·3
	1900, Feb.	5	5056	8·0
	,, ,,	14	5065	8·35
	,, ,,	19	5070	8·59
	,, ,,	27	5078	9·14
	,, Mar.	2	5081	8·7
	,, ,,	10	5089	8·83
	,, ,,	22	5101	8·94
	,, ,,	31	5110	8·86
	,, Apr.	7	5117	9·09
	,, ,,	19	5129	9·82

The Cape Observations are:—

			Mag.	
1899, Feb.	14		9·75	
,,	,,	17	10	
,,	Mar.	21	10·6	
,,	Apr.	23	9·8	
,,	,,	28	9·95	
,,	May	10	9·75	
,,	,,	20	9·8	

			Mag.	
1899, June		6	10±	
,,	,,	12	10	
,,	,,	19	10·1	
,,	,,	25	9·9	
,,	Aug.	27	9·9	
,,	Sept.	30	10·0	Is double, comes 11·5^{m} S. *pr.* 15″. } This companion
,,	Oct.	27	9·9	Is double. } is the variable.

Some of the above observations undoubtedly belong to the B.D. and C.P.D. star; the reliable observations made here of the variable start thus:—

			Julian Day.	Mag.	
1899, Sept.		30	2414928	11·5	
,, Oct.		27	4955	seen	
,, Nov.		11	4970	9·85	
,, ,,		12	4971	9·85	
,, ,,		13	4972	9·85	
,, ,,		18	4977	9·7	
,, ,,		21	4980	9·5	red 6.
,, ,,		22	4981	9·1	,, 7.
,, ,,		26	4985	9·0	,, 6.
,, ,,		28	4987	9·0	,,
,, Dec.		1	4990	8·55	,, 7.
,, ,,		2	4991	8·7	
,, ,,		4	4993	8·5	red 6.
,, ,,		7	4996	8·3	,, 6.
,, ,,		9	4998	8·3	
,, ,,		13	5002	8·2	
,, ,,		15	5004	8·1	red 7.
,, ,,		19	5008	8·0	,, 7.
,, ,,		20	5009	8·0	
,, ,,		22	5011	8·15	
,, ,,		24	5013	8·0	red 7.
,, ,,		27	5016	8·05	
,, ,,		30	5019	8·15	
1900, Jan.		1	5021	8·0	

			Julian Day.	Mag.	
1900, Jan.		3	2415023	8·05	
,, ,,		5	5025	8·0	red 7·5.
,, ,,		6	5026	8·0	
,, ,,		7	5027	8·0	
,, ,,		8	5028	8·1	
,, ,,		9	5029	8·0	
,, ,,		10	5030	8·0	
,, ,,		12	5032	8·2	
,, ,,		13	5033	8·25	
,, ,,		14	5034	8·1	red 8.
,, ,,		15	5035	8·2	
,, ,,		16	5036	8·1	
,, ,,		17	5037	8·3	
,, ,,		21	5041	8·3	
,, ,,		22	5042	8·3	
,, ,,		23	5043	8·35	
,, ,,		24	5044	8·3	red 6·5.
,, ,,		25	5045	8·3	,, 7·5.
,, ,,		26	5046	8·4	
,, ,,		27	5047	8·35	
,, ,,		31	5051	8·3	
,, Feb.		3	5054	8·38	
,, ,,		4	5055	8·35	
,, ,,		5	5056	8·4	

Average colour = 6·8.

A careful review of the above observations shews that maxima occurred on

1897, Feb. 4. J.D. 2413960.

and

1899, Dec. 19. 5008.

an interval of

1048 days.

The only division of this interval that the observations will allow is by two, giving as a first approximation to the period

524 days.

This star, when observed by Lalande, must have been near a maximum. His date is

1798, Mar. 1. = J. D. 2377825.

To the maximum of 1899 there is an interval of 37,183 days suggesting the following:

No. of Maxima	69	70	71	72
Resulting Period	538·9^{d}	531·2^{d}	523·7^{d}	516·4^{d}

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None of these periods is inconsistent with the C.P.D. plate No. 23 taken on 1889, Mar. 23 = J.D. 2411085 when the star was invisible.

Further observations or the dates when Argelander and Schönfeld went over this region are necessary to fix the period with precision.

This star must be exceedingly faint at its minimum.

Dr Hartwig has a note on the identity of this star in the *Astr. Nach.* No. 3676 of 1900, Dec. 12. He finds a period of $17\frac{1}{2}$ months equal to about 532 days.

There are very few variable stars with so long a period.

2691a. X PUPPIS.

Ö.A. 6999, 8^m. B.D. $-20°$, 2011, $8^m{\cdot}6$. C.P.D. $-20°$, 2577, $9^m{\cdot}4$.

	R.A.	Dec.
1875.	$7^h\ 27^m\ 21^s$	$-20°\ 38'{\cdot}7$
1900.	**7 28 26**	**−20 41 ·8**

Professor J. C. Kapteyn draws attention to the variability of this star in the *Astr. Nach.* No. 2987 of 1890, May 22. This paper is followed by a short note by Dr Schönfeld. The evidence thus adduced is :—

Authority.	Date.	Julian Day.	Mag.	
Schönfeld,	1877, Mar. 11	2406690	8·5	
,,	1880, Feb. 2	7748	9	
,,	1883, Mar. 2	8872	8	
,,	1884, Jan. 1	9177	8·8	not brighter
C.P.D. Plate,	1889, Apr. 2	11095	9·6	[9·35 re-reduction]
,,	,, ,, 8	1101	8·3	[8·6 ,,]
,,	,, ,, 30	1123	9·2	[9·3 ,,]

and later on Kapteyn communicated that on the plate taken on 1889, Mar. 23 the star is $9^m{\cdot}25$. (J.D. 2411085).

In Chandler's *Third Catalogue of Variable Stars*, its author remarks that the variability was "proved by Hartwig who suggests period of 415^d or one-half of the same." I have not been able to find Prof. Hartwig's paper. It is pointed out in the *Astr. Journ.* No. 485 that the period is about 26 days.

The observations found are :—

		Julian Day.	Mag.
Parkhurst and Perry,	1897, Mar. 4	2413989	8·6
Astr. Journ. No. 403	,, ,, 7	3991	8·23
(1897, May 20)	,, ,, 7	3992	8·8
[Perry's results are	,, ,, 10	3994	8·77
given to one decimal	,, ,, 10	3995	8·8
place].	,, ,, 21	4005	7·5
	,, ,, 26	4011	8·3
	,, ,, 28	4012	8·56
	,, ,, 30	4015	8·4
	,, Apr. 1	4017	8·5
	1897, Apr. 11	2414028	9·1
	,, ,, 17	4032	8·4
	,, ,, 19	4034	8·4
Parkhurst and Perry,	1898, Feb. 10	4332	8·82
Astr. Journ. No. 441	,, ,, 26	4348	8·3
(1898, Aug. 1).	,, Mar. 9	4358	9·0
	,, ,, 14	4364	9·3
	,, ,, 25	4375	8·6
	,, Apr. 8	4389	9·3

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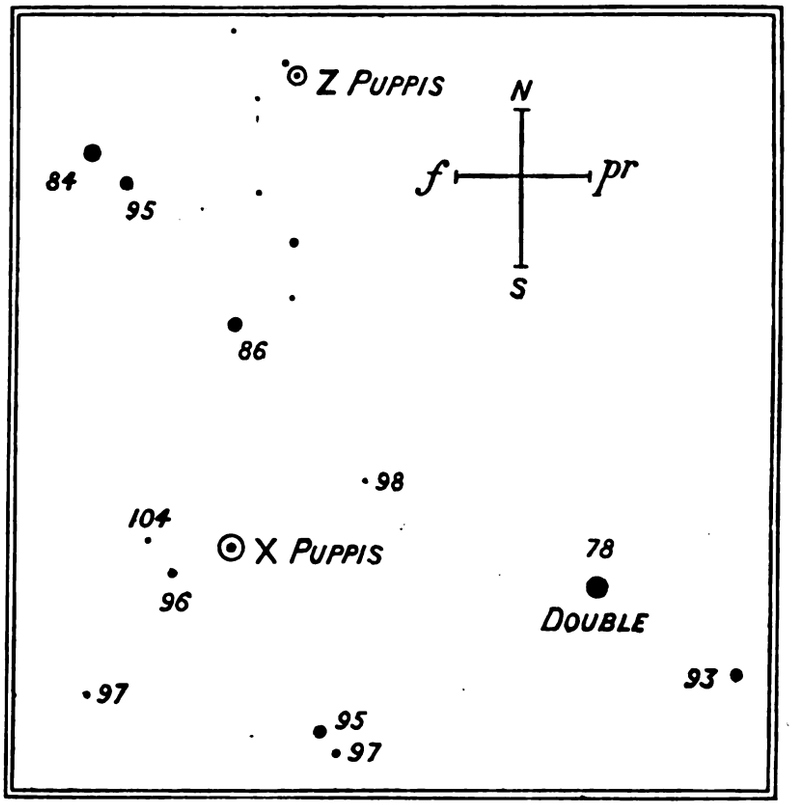
In *Astr. Journ.* No. 403 Mr H. M. Parkhurst gives a list of the comparison stars used by Mr Perry and himself. Below, will be found a copy of the map used here. The majority of Mr Parkhurst's stars are beyond the limits of my map; the star marked $7^{m}\cdot8$ double is $6^{m}\cdot9$ in his scale.



The magnitudes are multiplied by ten. The crossbars are 20 secs. in R.A. and 5′ in Dec. (Z Puppis is 15′ N., a little *pr.* X Puppis).

The Cape Observations are :—

1899.	Julian Day.	Mag.
Feb. 14	2414700	8·9
,, 17	4703	8·9 red 8.
Mar. 21	4735	8·3
Apr. 23	4768	8·4 yellow.
,, 28	4773	8·5
May 10	4785	8·2
,, 20	4795	8·4
June 6	4812	8·5
,, 10	4816	8·2 yellow 3.
,, 12	4818	8·4 ,, 4.
,, 25	4831	8·95
Aug. 27	4894	8·2
Sept. 30	4928	8·8 colour 6·5.
Oct. 27	4955	8·8 yellow 5.
Nov. 2	4961	9·0 good.
,, 11	4970	8·3

1899.	Julian Day.	Mag.
Nov. 12	2414971	8·2 *y* 5·5.
,, 13	4972	8·2
,, 18	4977	8·6
,, 21	4980	8·8
,, 22	4981	8·9 *r* 6·5.
,, 26	4985	8·95
,, 28	4987	9·15
Dec. 1	4990	8·35
,, 2	4991	8·2
,, 4	4993	8·2
,, 7	4996	8·2
,, 9	4998	8·25
,, 13	5002	8·35
,, 15	5004	8·5
,, 19	5008	8·5
,, 20	5009	8·7

1899.	Julian Day.	Mag.
Dec. 22	2415011	8·85
,, 24	5013	8·9
,, 27	5016	8·7
,, 30	5019	8·1
1900.		
Jan. 1	5021	8·2
,, 3	5023	8·2
,, 4	5024	8·2
,, 5	5025	8·2 *r* 6·5.
,, 6	5026	8·2
,, 7	5027	8·3
,, 8	5028	8·25
,, 9	5029	8·3
,, 10	5030	8·35
,, 12	5032	8·5
,, 13	5033	8·45

1900.	Julian Day.	Mag.
Jan. 14	2415034	8·6
,, 15	5035	8·6
,, 16	5036	8·7
,, 17	5037	8·8
,, 21	5041	8·9
,, 22	5042	8·5
,, 23	5043	8·1
,, 24	5044	8·0 *y* 4.
,, 25	5045	8·0
,, 26	5046	8·1
,, 27	5047	8·25
,, 31	5051	8·35
Feb. 3	5054	8·45
,, 4	5055	8·35
,, 5	5056	8·3

An inspection of the above observations suggests maxima on the following dates. These are given under the column O; the column headed C has been computed from the following formula :—

1883 Mar. 2 = J.D. 2408893 + $25^{d}\cdot953$ E.

	O.	C.	O.—C.
1883, Mar. 2 =	2408893	2408893	0
1889, Apr. 8	11101	11099	+2
1897, Mar. 21	14005	14006	−1
,, Apr. 17	14032	14032	0
1898, Feb. 26	14347	14343	+4
1899, Mar. 21	11735	14732	+3
,, May 10	14755	14758	−3

	O.	C.	O.—C.
1899, June 10 =	2414785	2414784	+1
,, Aug. 27	14895	14888	+7
,, Nov. 12	14971	14966	+5
,, Dec. 2	14991	14992	−1
,, Dec. 30	15019	15018	+1
1900, Jan. 24	15044	15044	0

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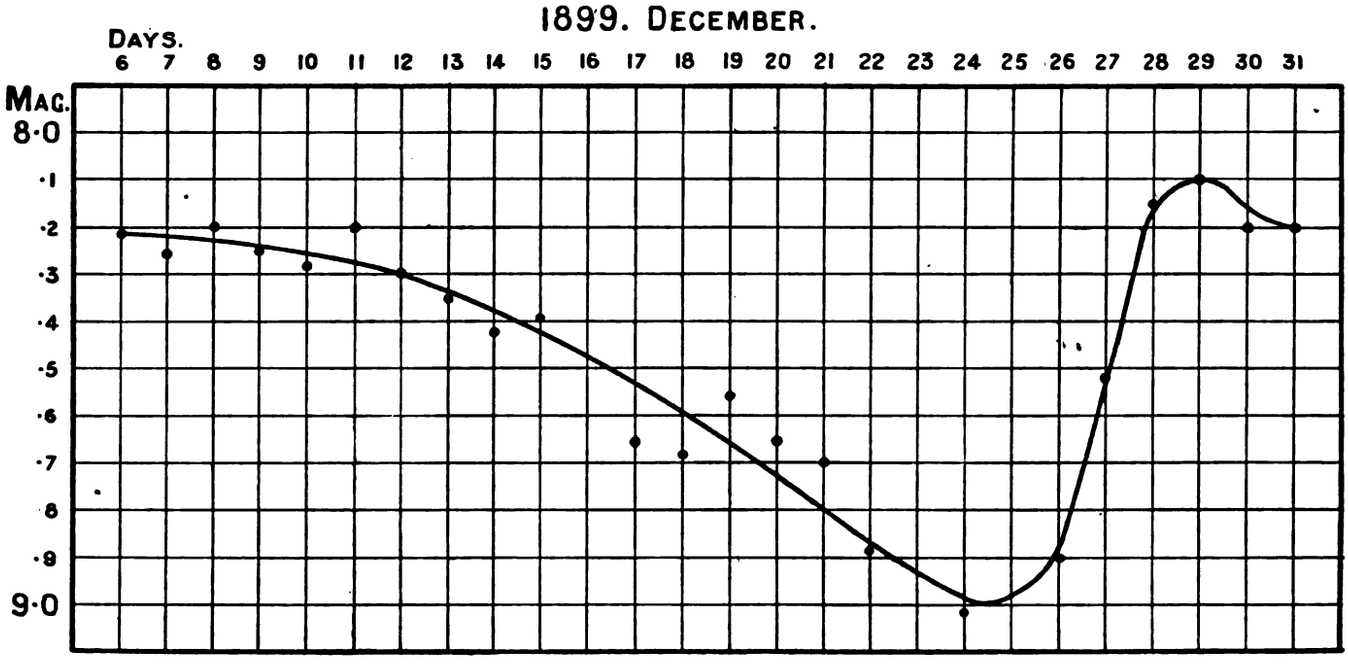
In a like way for the minima, assuming as an epoch of a minimum, the date 1880, Jan. 31 = J.D. 2407746.

		O.	C.	O.—C.
1880, Feb. 2	=	2407748	2407746	+2
1884, Jan. 1		9177	9173	+4
1889, Apr. 2		11095	11094	+1
,, ,, 30		11123	11120	+3
1897, ,, 11		14026	14027	−1
1898, Mar. 9		14358	14364	−6
,, Apr. 8		14388	14390	−2

		O.	C.	O.—C.
1899, Feb. 16	=	2414701	2414701	+1
,, June 25		14831	14831	0
,, Nov. 2		14961	14961	0
,, ,, 28		14987	14987	0
,, Dec. 24		15013	15013	0
1900, Jan. 21		15041	15039	+2

Assuming a period of 26 days I have plotted the Cape observations between 1899, Nov. 11 and 1900, Feb. 5 brought up to the epoch December 1899, so as to learn the form of the magnitude-curve.*



Hence :—

M—m = $5{\cdot}2^{d}$.
M 1899, Dec. 29 = J.D. 2415018.
Range $8^{m}{\cdot}0$ to $9^{m}{\cdot}0$.

Colour scale :—

Mag.	Colour.
8·0	4·0.
8·2	5·0.
8·8	5·7.
8·9	7·2.

A new reduction gives a period of

25·948 days

which is the best that the present material will yield.

Since this was written, the following observations have been found on Cape plates, Nos. 3984, 4020, 4048, 4069, and 4108; 1895, Dec. 12, 13, 14, $8{\cdot}5^{m}$; Dec. 30, 31, 9^{m}; 1896, Jan. 14, 15, 16, $8{\cdot}7^{m}$; Jan. 22, 9^{m}; Jan, 31, $8{\cdot}6^{m}$; Feb. 22, $9{\cdot}4^{m}$; Feb. 24, $9{\cdot}0^{m}$; Feb. 25, $8{\cdot}7^{m}$. The magnitudes were estimated by Mr C. Ray Woods. These observations shew a maximum about 1896, Feb. 1 = J.D. 2413591, which agrees excellently with the above period.

This variable star has some resemblance to the following star of which the elements are taken from Dr Chandler's Third Catalogue.

	Range	M—m	Colour	Period.
T Monocerotis	$\frac{5{\cdot}8^{m}}{6{\cdot}4}$ to $\frac{7{\cdot}4^{m}}{8{\cdot}2}$	$7^{d}{\cdot}93$	2	$27^{d}{\cdot}012$.

* The diagram, which was sent to the printers in error, shows the *form* of the magnitude-curve with all the accuracy attainable from the Cape observations, but it is incomplete. The definitive diagram, from which the elements have been deduced, differs so little, that its substitution would be no gain.

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2709. S VOLANTIS.

C.Z. VII. No. 2258. C.P.D.—73°, No. 453.

	R.A.	Dec.
1875.	$7^h\ 31^m\ 53^s{\cdot}7$	—73° 6′·6.
1900.	**7 31 30·0**	**—73 9·8.**

This star is 13^{secs} *f.* C.Z. VII. No. 2246 which has been rated as follows:—

C.Z. = 10^m
C.G.A. = 9 (mean of $9\frac{1}{4}$, $8\frac{3}{4}$)
C.P.D. = 9·5
G.P.Z. = 9·5

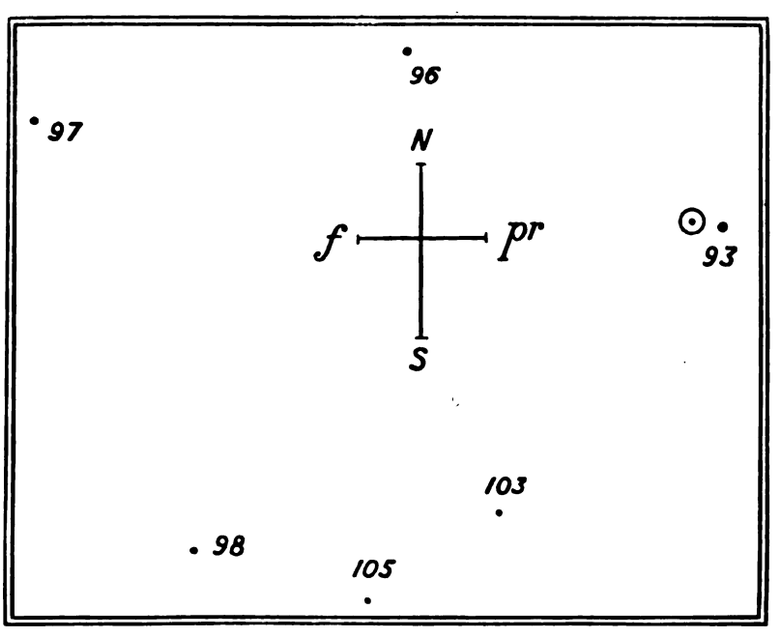
C.Z. VII. No. 2258 is a suspected variable of Professor J. C. Kapteyn's list on the following evidence: — "In C.Z. $9^m{\cdot}0$ with ? so that it has been looked for in vain at some time in Cordoba.

On plate 75°, $7^h\ 0^m$, $9^m{\cdot}8$.

" " 75°, $8^h\ 0^m$, which at least in this region is richer than the previous plate, the star is certainly missing.

Variability seems very probable."

The Cape observations were commenced at the end of 1899 and the variability of the star was soon proved. It can be identified by the aid of the following map.



NOTE.—The magnitudes on the map have been multiplied by ten.
From N. to S. is 5′ in dec., from *pr.* to *f.* is 60 secs. in R.A.

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All the observations found are quoted :—

		J.D.	Mag.
	Cordoba, 1874, Mar. 14.	2405597	9·0
	,, 188	.....	inv.
1	C.P.D. 1889, Jan. 28.	9935	9·8
	,, ,, Mar. 24.	9990	inv.

and, on account of the proximity of the neighbouring star C.Z. VII. No. 2246, it may be safely inferred that the variable was below that star in magnitude on the following occasions :—

Gilliss P.Z.	1851·06
C.G.A.	1884 Jan. 31.
,,	,, Feb. 5.
,,	,, ,, 8.

The Cape observations are :—

1899.	Julian Day.	Mag.	Colour.
Nov. 11	2414970	10·5	
,, 18	4977	10·5	
,, 21	4980	10·5	
,, 28	4987	11·0	
Dec. 13	5002	10·5	
,, 20	5009	9·95	
1900.			
Jan. 1	5021	9·7	
,, 4	5024	9·45	
,, 6	5026	9·5	7
,, 7	5027	9·5	
,, 10	5030	9·4	7
,, 12	5032	9·35	7
,, 15	5035	9·15	7
,, 17	5037	9·15	
,, 21	5041	9 1	
,, 22	5042	9·1	7
,, 24	5044	9·15	
,, 26	5046	9·15	
,, 27	5047	9·15	
,, 31	5051	9·15	7

1900.	Julian Day.	Mag.	Colour.
Feb. 4	2415055	9·2	
,, 8	5059	9·25	
,, 14	5065	9·3	
,, 20	5071	9·6	
,, 25	5076	[9·6]	
Mar. 3	5082	9·65	
,, 8	5087	9·85	
,, 10	5089	9·8	
,, 16	5095	9·8	
,, 22	5101	9·9	
,, 25	5104	9·8	
,, 27	5106	9·9	
Apr. 3	5113	10·2	
,, 16	5126	10·5	
,, 18	5128	10·6	
,, 28	5138	10·6	
May 3	5143	11·5	
,, 6	5146	11·7	
,, 15	5155	< 10·9	
,, 26	5166	< 11·0	
Aug. 13	5245	< 11·0	

1900.	Julian Day.	Mag.	Colour.
Oct. 20	2415313	< 11·0	
Nov. 2	5326	11·0	
,, 10	5334	11·5	
,, 13	5337	11·0	
,, 26	5350	10·4	
Dec. 1	5355	10·3	
,, 5	5359	10·4	
,, 12	5366	10·0	
,, 16	5370	10·3	
,, 26	5380	10·0	
,, 29	5383	9·8	
1901.			
Jan. 2	5387	10·0	
,, 8	5393	10·0	
,, 11	5396	9·9	
,, 16	5401	9·9	
,, 21	5406	9·65	
,, 27	5412	9·6	
Feb. 1	5417	9·1	4
,, 9	5425	9·0	5

1901.	Julian Day.	Mag.	Colour.
Feb. 16	2415432	8·9	7
,, 19	5435	8·9	6
,, 22	5438	8·85	6
,, 24	5440	8·85	7
,, 26	5442	8·95	
Mar. 1	5445	8·9	6
,, 4	5448	8·9	
,, 9	5453	8·9	7
,, 13	5457	9·0	
,, 15	5459	9·0	
,, 18	5462	9·05	
,, 22	5466	9·05	
,, 25	5469	9·0	6
,, 27	5471	9·0	7
,, 31	5475	9·15	
Apr. 4	5479	9·35	
,, 6	5481	9·65	
,, 11	5486	9·7	
,, 13	5488	9·8	
,, 21	5496	10·1	

On plotting these observations it is found that two maxima have been observed, in addition to the two previous observations of the star, which cannot have been far distant from maxima on the dates recorded; these dates together with computed dates from the formula.

J.D. $2415042 + 393^{d}\cdot5\ E.$

are given herewith :—

Maxima Observed. Julian Day.	Calculated. Julian Day.	O.—C. d
2415437	2415436	+1
15041	15042	−1
09935	09927	+8
05597	05598	−1

The period used indicates a minimum at the time of Gilliss's observation of the neighbouring star.

Range :— $\frac{8^{m}\cdot8}{9^{m}\cdot1}$ to < $11^{m}\cdot8$ (probably to $12^{m}\cdot9$).

There are indications of a halt of 20^{d} about 20 to 40 days after maximum.

Colour = 6·1.

Variables of the type and period of this star are well known. For other examples, see under R Horologii and W Velorum in this volume.

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2781. R R PUPPIS.

C.P.D. —41°, No. 1681, $9^{m}\cdot3$. Cor. D.M. —41° No. 3380, $9^{m}\cdot8$.

	R.A.	Dec.
1875.	$7^{h}\ 42^{m}\ 41^{s}\cdot1$	—41° 4′ 0.
1900.	**7 43 31·7**	**—41 7 7.**

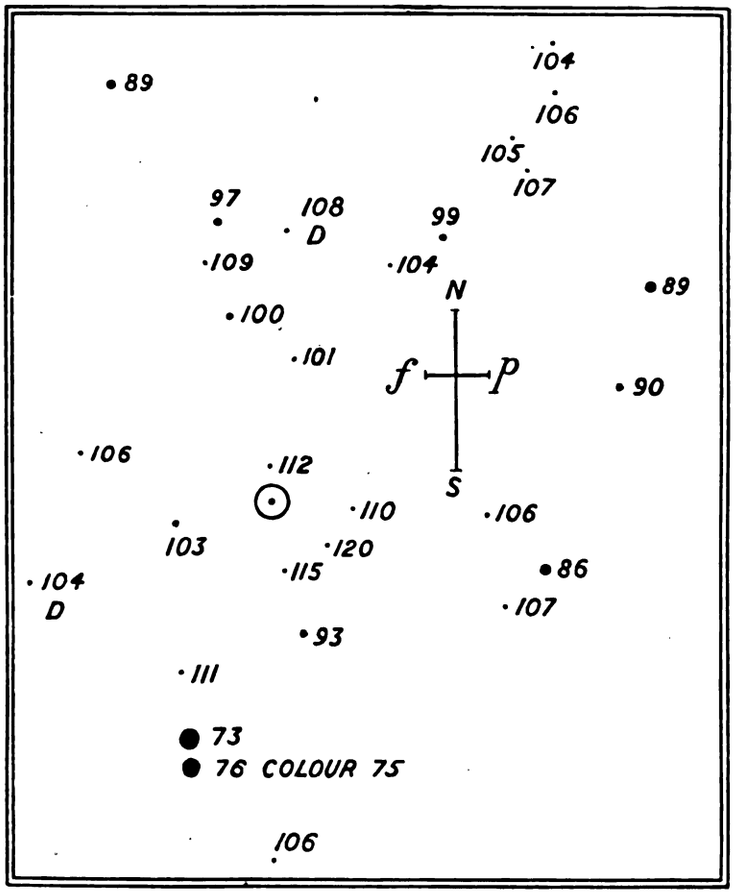
This star is contained in Professor J. C. Kapteyn's list of Suspected Variable Stars on the following evidence :—

		Mag.
C.P.D. Plate No. 1046	1887, Dec. 17	9·3.
1055	,, ,, 21	9·3.
2662	1890, May 9	9·3.
2667	,, ,, 10	10·2.

No defect in the film of plate 2667 nor in the image of the star could be detected.

The first two visual observations made here confirmed the variability of the star, and subsequent observations proved it to be an *Algol-type* variable. This was communicated to the *Astr. Journ.*, and published in No. 468 on the 29th Aug. 1899. Dr Roberts of Lovedale was also written to about the star, and he kindly put it on his observing list. He immediately confirmed the *Algol-type* of light curve, but pointed out that the period that I had given for the star was about double its actual amount. I at once referred to Dr Roberts's communication in a note sent to the *Astr. Journ.*, which, after about 12 months' delay, was published in No. 487 on Dec. 13, 1900. There, it was pointed out that by using the C.P.D. minimum of 1890, May 10 = J.D. 2411498 and 515 intervals, we get a period of 6·4423 days, but I have since considered that the number of intervals should be 516, giving a period of $6^{d}\ 10^{h}\ 18^{m}\ 58^{s}\cdot2$, which is probably within $15^{secs.}$ of the exact period.

The star can be readily identified by the aid of the following map.



NOTE.—Magnitudes are multiplied by 10. D = Double star. Scale N. to S. = 5′; *p.* to *f.* = $12^{secs.}$

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The observations, with their reduction to a date near 1899, June 10 are given on the following table. The period used in the reduction is $12^d\ 21^h\ 28^m\ 5^s{\cdot}4$ sidereal time, which is sufficiently exact for the purpose. No heliocentric correction has been applied, as its greatest value for these observations is under $4^{mins.}$, and consequently inappreciable under the circumstances.

Date. 1899.	C.S.T. h m		Reduced Date. 1899.	C.S.T. h m	Mag.
Feb. 14	6 ±	=	June 10	7 ±	10·5
,, 15	5 48		,, 11	7 0	9·6
,, 17	5 40		,, 13	6 52	9·6
,, ,,	7 40		,, ,,	8 52	9·4
,, 18	5 55		,, 14	7 7	9·35
,, 19	8 55		,, 2	12 40	9·4
,, 20	9 18		,, 3	13 3	9·4
,, 21	9 20		,, 4	13 5	9·3
,, 22	6 0		,, 5	9 45	9·4
,, 25	9 50		,, 8	13 35	9·55
,, ,,	10 22		,, ,,	14 7	9·55
,, 26	5 45		,, 9	9 30	9·5
,, ,,	7 53		,, ,,	11 38	9·5
,, 27	5 49		,, 10	9 34	10·5
,, ,,	5 58		,, ,,	9 43	10·5
,, ,,	6 10		,, ,,	9 55	10·4
,, ,,	6 21		,, ,,	10 6	10·4
,, ,,	7 0		,, ,,	10 45	10·5
,, ,,	7 53		,, ,,	11 38	10·6
,, 28	5 52		,, 11	9 37	9·45
Mar. 4	7 19		,, 2	13 35	9·45
,, ,,	7 56		,, ,,	14 12	9·4
,, 5	6 20		,, 3	12 36	9·45
,, 6	8 4		,, 4	14 20	9·5
,, 7	7 21		,, 5	13 37	9·45
,, 9	10 45		,, 7	17 1	9·4
,, 11	10 8		,, 9	16 24	9·5
,, ,,	10 46		,, ,,	17 2	9·5
,, 12	6 48		,, 10	13 4	10·2
,, ,,	7 19		,, ,,	13 35	10·3
,, 13	9 32		,, 11	15 48	9·5
,, 17	6 59		,, 2	15 48	9·4
,, ,,	8 32		,, ,,	17 21	9·4
,, 19	6 46		,, 4	15 35	9·4
,, 21	8 33		,, 6	17 22	9·5
,, ,,	10 31		,, ,,	19 20	9·6
,, 22	9 1		,, 7	17 50	9·4
Apr. 23	10 55		,, 1	3 19	9·35
,, 27	8 25		,, 5	0 49	9·6
,, ,,	8 54		,, ,,	1 18	9·5
,, ,,	13 0		,, ,,	5 24	9·5
,, 28	9 0		,, 6	1 24	9·35
,, ,,	10 31		,, ,,	2 55	9·35
,, 29	9 52		,, 7	2 16	9·35
May 2	9 0		,, 10	1 24	9·45
,, ,,	9 58		,, ,,	2 22	9·7
,, ,,	10 27		,, ,,	2 51	9·75
,, 4	9 6		,, 12	1 30	9·5
,, ,,	9 34		,, ,,	1 58	9·6
,, 10	9 26		,, 5	4 22	9·3
,, ,,	10 11		,, ,,	5 7	9·4
,, 11	12 13		,, 6	7 9	9·4
,, 12	9 18		,, 7	4 14	9·4
,, 13	10 22		,, 8	5 18	9·55
,, ,,	11 5		,, ,,	6 1	9·65
,, ,,	11 44		,, ,,	6 40	9·5
,, 14	9 51		,, 9	4 47	9·5

Date. 1899.	C.S.T. h m		Reduced Date. 1899.	C.S.T. h m	Mag.
May 14	10 50	=	June 9	5 46	9·5
,, ,,	12 6		,, ,,	7 2	9·4
,, 19	9 35±		,, 1	7 3	9·45
,, ,,	13 21		,, ,,	10 49	9·4
,, 20	10 24		,, 2	7 52	9·4
,, 21	10 14		,, 3	7 42	9·5
,, ,,	11 54		,, ,,	9 22	9·5
,, 22	9 48		,, 4	7 16	9·5
,, 25	10 20		,, 7	7 48	9·5
,, 26	10 17		,, 8	7 45	9·45
,, 27	12 10		,, 9	9 38	9·5
,, 28	10 31		,, 10	7 59	10·7
,, 31	11 0		,, 13	8 28	9·55
June 1	11 ±		,, 14	8 ±	9·45
,, 3	10 40				9·45
,, 4	10 32				9·5
,, 5	10 45				9·45
,, 6	11 22				9·55
,, 7	11 6				9·5
,, 9	10 59				9·55
,, ,,	12 2				9·5
,, 10	11 7				10·75
,, ,,	11 27				10·65
,, ,,	12 11				10·7
,, ,,	12 43				10·65
,, ,,	13 0				10·45
,, ,,	13 30				10·3
,, ,,	13 41				10·3
,, ,,	13 49				10·2
,, ,,	13 57				10·1
,, ,,	14 9				10·0
,, ,,	14 11				9·9
,, ,,	14 14				9·9
,, ,,	14 22				9·85
,, ,,	14 28				9·85
,, 11	10 58				9·5
,, ,,	11 33				9·55
,, 12	11 21				9·5
,, 13	11 52				9·5
,, 18	12 56		June 5	15 28	9·5
,, 19	11 56		,, 6	14 28	9·5
,, 24	12 32		,, 11	15 4	9·45
,, 25	12 2		,, 12	14 34	9·5
July 2	12 27		,, 6	17 31	9·5
,, 4	12 50		,, 8	17 54	9·45
,, 6	13 3		,, 10	18 7	9·5
,, ,,	13 58		,, ,,	19 2	9·5
Aug. 27	3 12		,, 11	18 23	9·5
Sept. 30	4 49		,, 75	3 36	9·5
Oct. 22	4 34		,, 3	8 25	9·5
Dec. 7	3 33		,, 10	15 0	9·8
,, ,,	3 49		,, ,,	15 16	9·75
,, ,,	4 14		,, ,,	15 41	9·73
,, ,,	4 33		,, ,,	16 0	9·7
1900.					
Jan. 6	6 2		,, 3	1 5	9·45

The observations between these dates require no reduction.

These observations have been plotted on diagram No. 1. It will be noticed that no observations have been

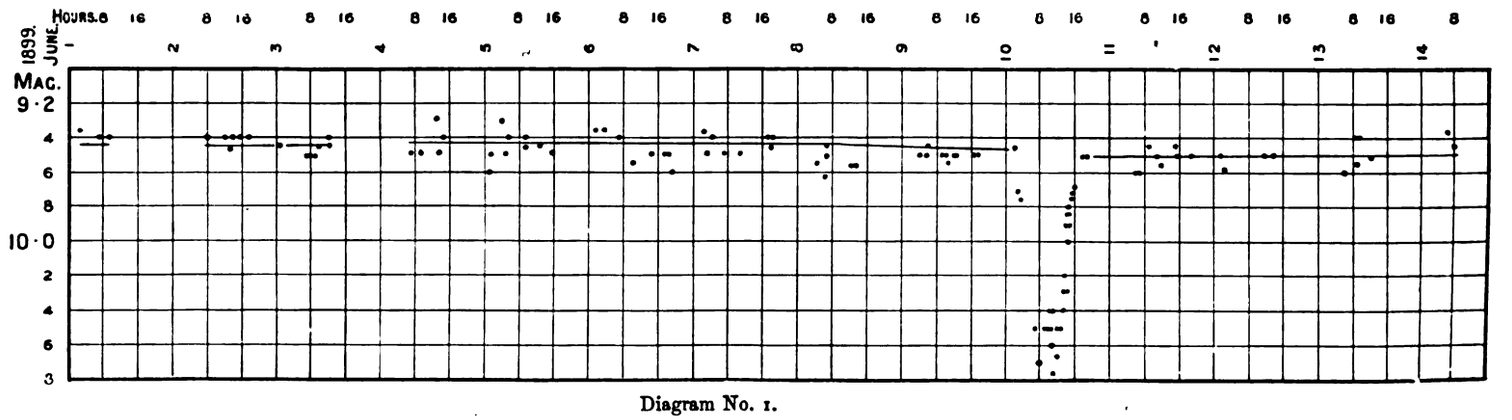

Diagram No. 1.

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secured here which, with a period of $12^d\ 21^h$, would reduce to 1899, June 4, in the hours of a minimum on that date, hence although the Cape observations do not confirm the 6^d period, they are not against it.

On diagram No. 2 the observations near minimum are shewn, still using the sidereal period above mentioned.

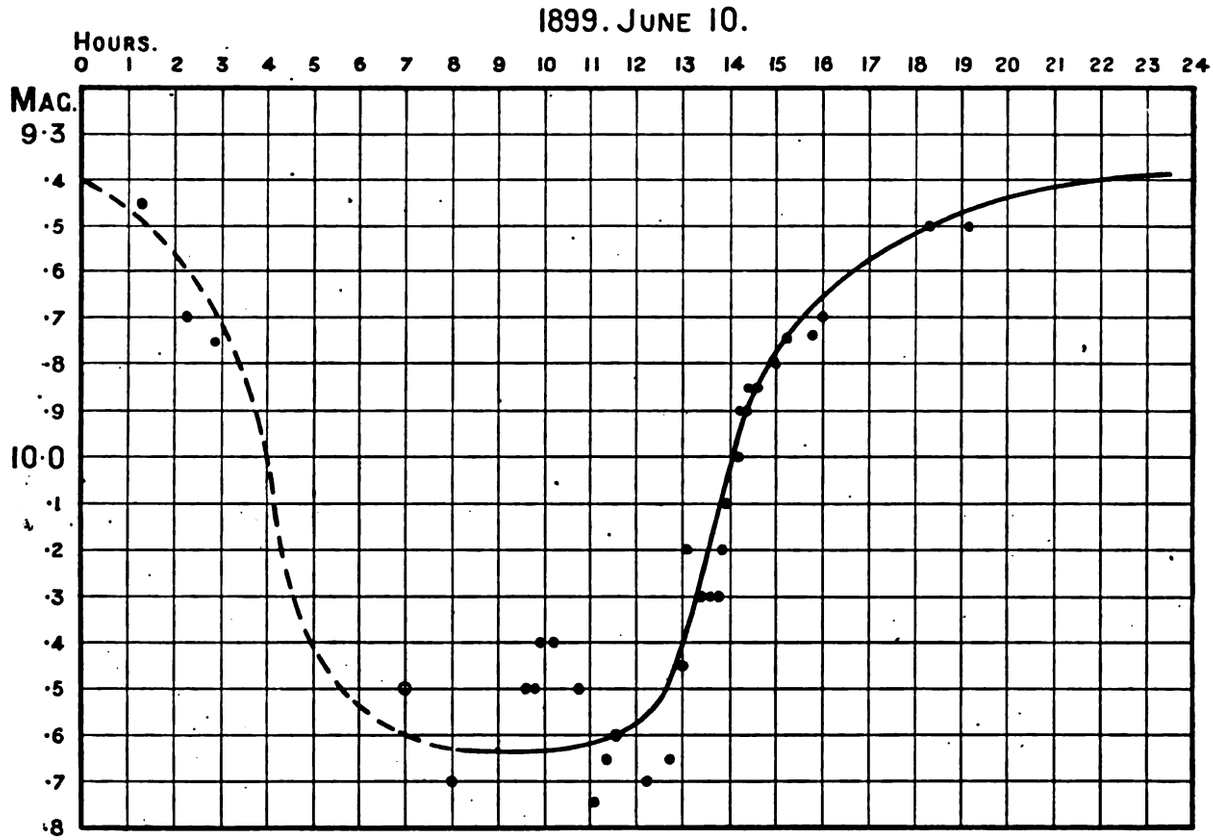

Diagram No. 2.

The period of light variation is about 16 hours.

Since the above was written, Dr Roberts's results have been published (*Astr. Journ.* Nos. 491–2). A comparison of the elements will be interesting, viz. :—

	Range.	Period.	Epoch of Minimum.
Roberts :—	$10{\cdot}0^m$ to $11{\cdot}0^m$	$6^d\ 10^h\ 19^m\ 25^s{\cdot}0$	1900, Jan. $1^d\ 20^h\ 34^m$
Cape :—	9·45 to 10·7	6 10 18 58 ·2	1900, Jan. 1 20 37

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2935. R S PUPPIS.

	R.A.	Dec.
1875.	$8^h\ 8^m\ 16^s{\cdot}5$	$-34^\circ\ 12'{\cdot}2$
1900.	**8 9 14·0**	**−34 16·6**

The meridian observations of this star are as follows:—

	Epoch.	1875. R.A.	Dec.	No. of Obs.
Washington Mer. Cir. Zone 166 No. 21,	1849·2	$8^h\ 8^m\ 16^s{\cdot}24$	$-34^\circ\ 12'\ 10''{\cdot}6$	1
Cordoba Zone Catalogue VIII. No. 679,	1873·1	16 ·51	7 ·5	2
Argentine General Catalogue No. 10946,	1880·2	16 ·39	11 ·0	3

The variability of this star was discovered by Miss Reitsma, an assistant to Prof. Kapteyn, from an examination of the C.P.D. plates. Confirmation from visual observations made here was published in the *Astr. Nach* No. 3441 of 1897, Aug. 16. The variability was also confirmed by Dr A. W. Roberts at Lovedale—see *Astr. Journ.* No. 477. See also *Astr. Journ.* No. 442 of 1898, Aug. 22.

All the observations found are:—

	Date.	Mag.
Washington,	1849, Mar. 7	6
Cordoba,	1873, Jan. 14	$7\frac{1}{2}$
,,	,, Feb. 9	8
,,	1880, Mar. 3	$7\frac{3}{4}$
,,	,, ,, 4	$7\frac{1}{2}$
,,	,, ,, 5	$7\frac{3}{4}$
C.P.D. Plate 1096,	1888, Jan. 12	8·9
,, 1097,	,, ,, 13	9·0
C.P.D. Plate 1105,	1888, Jan. 14	9·0
,, 1182,	,, Mar. 7	7·9
,, 1221,	,, ,, 15	8·1
Cordoba,	1890, Apr. 14	7·25
,,	,, ,, 19	7
C.P.D. Plate 2685,	,, May 30	8·4
,, 2687,	,, June. 3	8·7
Cordoba,	1891, Apr. 5	7

Cape:—

Date.	Mag.	Colour.
1897.		
Feb. 16	7·05	
Apr. 5	7·1	
May 4	7·6	yellow.
,, 5	7·6	
,, 10	6·9	
,, 13	6·9	
,, 17	6·8	
,, 20	6·9	
,, 22	7·1	
,, 29	7·3	
June 1	7·4	red 6.
,, 7	7·7	,, 6.
,, 12	7·7	
,, 14	7·8	
,, 18	[7·4]	
,, 26	[7·2]	
,, 29	7·0	red 7.
July 2	7·1	
,, 13	[7·2]	
Dec. 4	6·9	
,, 10	6·75	
,, 17	7·1	yellow 6.
,, 23	7·2	
,, 26	7·2	
,, 28	7·35	
,, 30	7·5	yellow 6.
1898.		
Jan. 2	7·7	
Jan. 4	7·5	
,, 5	7·5	
,, 9	7·3	
,, 10	7·2	
,, 12	7·0	
,, 14	7·0	
,, 15	7·0	
,, 16	6·8	
,, 18	7·1	
,, 19	7·1	
,, 20	7·2	
,, 21	7·2	
,, 26	7·15	
,, 30	7·2	
Feb. 7	7·5	
,, 8	7·5	yellow 4.
,, 14	7·6	
,, 18	8·0	
,, 20	7·5	
,, 27	7·0	or. yel. 7·5.
Mar. 3	7·0	
,, 12	7·1	
Apr. 23	7·15	
May 7	7·6	
,, 13	7·5 ±	
,, 15	7·2	
,, 18	7·05	
May 19	7·05	
,, 21	6·9	
,, 26	7·1	
,, 27	7·2	
,, 28	7·3	
,, 31	7·35	
June 2	7·4	
,, 6	7·4	
,, 8	7·45	
,, 9	7·44	
,, 10	7·54	
,, 11	7·6	
,, 13	7·52	
,, 14	7·54	
,, 15	7·52	
,, 18	7·8	
,, 21	7·8	
,, 22	7·8	
,, 23	7·83	
,, 25	7·2	
,, 30	6·82	
July 1	7·0	
,, 2	6·82	
,, 9	7·1	
,, 10	7·24 cloud.	
Dec. 14	6·8	
,, 20	7·2	
Dec. 31	7·4	
1900.		
Jan. 3	7·3	
,, 4	7·1	
,, 5	7·2	
,, 6	7·1	
,, 8	7·5 good.	
,, 9	7·4	
,, 10	7·5	
,, 12	7·6	
,, 13	7·6	
,, 14	7·5	
,, 16	7·7	
,, 17	7·8	
,, 21	7·75	
,, 22	7·6	
,, 23	7·4	
,, 24	7·4	
,, 25	7·2	
,, 26	6·95	
,, 27	6·85	
,, 31	6·75	
Feb. 3	6·85	
,, 4	6·9	
,, 5	7·0	
,, 6	6·9	

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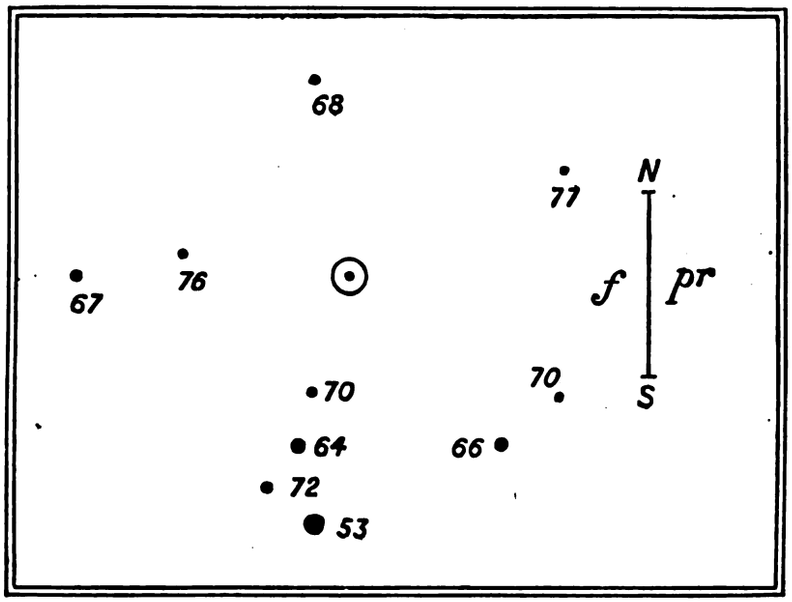
The star may be identified by the aid of the following map :—



The magnitudes on the map have been multiplied by ten. The bar N.S. is 1' in length.

All the above observations have been reduced to the maximum which occurred in January 1898, using a period of

41·313 days.

The representation is shewn on the diagram on next page.

The C.P.D. magnitudes on the diagram have been brightened by 1·1 to bring them to the visual scale. The colour of the star is orange-yellow = 6·1.

We find

Maxima :—	1898, Jan. 17 + 41^{d}·313 E.
Range of magnitude :—	6·8 to 7·9.
M—m.	13^{d}.

Lagging at 7^{m}·2 about 6 days after maximum, no halt at minimum.

From the mean curve we get :—

Days from Max.	Mag.	Days from Max.	Mag.
−13	7·85	+ 9	7·2
−11	7·7	+11	7·2
− 9	7·45	+13	7·2
− 7	7·3	+15	7·25
− 5	7·1	+17	7·3
− 3	6·95	+19	7·35
− 1	6·8	+21	7·45
+ 1	6·8	+23	7·55
+ 3	6·9	+25	7·7
+ 5	7·05	+27	7·8
+ 7	7·15	+29	7·85

It will be seen that this variable star is in every way well placed for the observer who has only a small altazimuth telescope, as it is close to a naked eye star and is thus easily found, and it never becomes too faint for continuous observation.

Dr Roberts's elements (*Astr. Journ.* No. 491–2) permit the following comparison :—

	Range. m m	M—m.	Elements of Maximum. d
Roberts :—	7·0 to 8·5	11·8	J.D. 2415050·3 + 41·26 E.
Cape :—	6·8 to 7·9	13·	5050·6 + 41·313 ,,

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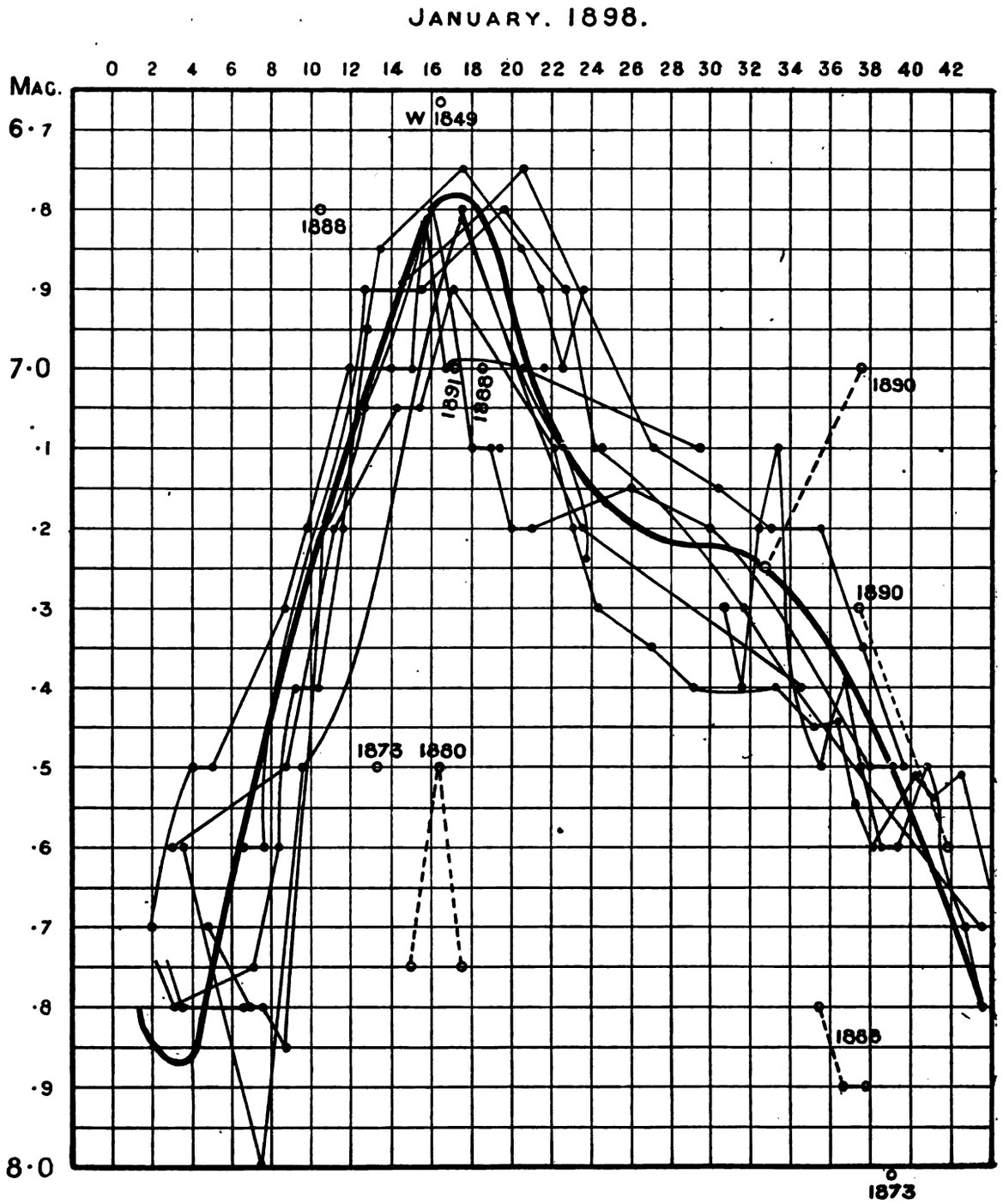
Similar variable stars are

	Range.	M – m.	Period.
	m m	d	d
3922 U Carinæ,	6·8 to 8·0	5·5	38·74.
6794 R Lyræ,	4·0 to 4·7	22·7	46·4.

but the resemblance is not very close, so that 2935 R S Puppis stands by itself to a certain extent.



Magnitude Curve of R S PUPPIS.

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3128. R PYXIDIS.

Ö. A. 8952. C. G. A. 11860 (orange-red). Cor. D.M. —27°, No. 5879 (color).

	R. A.	Dec.
1875.	$8^h\ 40^m\ 14^s$	—27° 44′·8.
1900.	**8 41 17**	**—27 50·2.**

The variability of this star was suspected by Professor Kapteyn, as it is missing on the C.P.D. plates. But it had previously been suspected, and was, in fact, a known variable.

In his third Catalogue Dr Chandler remarks :—

"Suspected by Weiss; proved by Holetschek, 1890. This letter assigned, because the variability of the star to which the letter R was assigned (*Uran. Argent.* p. 297), has not yet been confirmed."

The elements given are

Maxima :— 1889, Dec. 13 J.D. 2411350 + 355^d E. ?
Colour :— 6. Range :— $8^m{\cdot}0 - < 11^m{\cdot}0$.

Dr J. Holetschek's discovery, with the star's previous history, will be found in the *Astr. Nachr.* No. 3020 of 1891, Feb, 16.

The star is not found on the two C.P.D. plates

No. 2221, 1889, Apr. 1.
,, 2233, ,, ,, 8.

3244. S PYXIDIS.

C.Z. VIII. No. 4821. Cor. D.M. – 24°, No. 7693.

	R.A.	Dec.
1875.	$8^h\ 59^m\ 35^s$.	—24° 35′·5.
1900.	**9 0 41**	**—24 41·4.**

This star is missing in the C.P.D. and in consequence, a search was made for it here, which proved its variability by May 1896.

But the star also occurs in the Cor. D.M. list of "Suspected Variables." (Vol. I. p. xxxviii.) and the variability was confirmed by a search at the Harvard College Observatory (See Circular No. 7 of 5 June 1896). The photographic range of magnitude found on the Harvard plates was from $8^m{\cdot}9$ to $11^m{\cdot}1$.

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The observations found are as follows :—

Authority.	Date.	Julian Day.	Mag.
Cordoba,	1874, Apr. 3	2405614	9·0
,,	1887, Jan. 25	10297	8·5
,,	,, ,, 27	10299	8·0
,,	1891, ,, 16	11749	9·3
,,	,, Apr. 9	11832	9·7
C.P.D. Plate,	,, June 15	11899	nil.
,, ,,	,, ,, 19	11903	nil.

Authority.	Date.		Julian Day.	Mag.	
Cordoba,	1891, Dec. 3		2412070	inv.	
R. H. West, A.J. 385 (1896, Oct. 6),	1896, Feb. 2	}	13592		
,,	,, Mar. 1	± }	12 obs. 13620	8·3	Max.
,,	,, May 29	}	13709		
,, A.J. 414 (1897, ,,),	1897, Feb. 25	}	13981	10·4	
,,	,, May 4	}	11 obs. 14049	8·35	Max.
,,	,, June 4	}	14080	9·1	

The Cape visual observations are :—

Date.	Julian Day.	Mag.
1896, Apr. 19	2413669	9·3 white.
,, May 20	13700	10·2.
,, ,, 26	13706	inv. (
,, June 8	13719	12·5.
,, ,, 28	13739	< 11·0.
,, ,, 30	13741	< 12·5.

These observations are fairly well represented by the following formula :—

Maxima :—1897, Apr. 25 = J.D. 2414040 + 208d E.
Range :—8·2m — < 12·0m.
Colour = 0.

3394. Y VELORUM.

C.P.D. —51° No. 2275. Cor. D.M. —51°, No. 3858.

	R.A.	Dec.
1875.	9h 24m 49s·6	—51° 38′·1.
1900.	**9 25 40·0**	**—51 44·6.**

This star appears in "Dr Thome's List of Suspected Variable Stars" in the third volume of the *Cordoba Durchmusterung.* An inspection of the Cape *Carte du Ciel* plates made the hypothesis of variability very probable ; visual observation soon furnished satisfactory evidence that the star really is variable.

The photographic observations found are :—

		Julian Day.	Mag.	
C.P.D. Plate 379,	1890, June 12	2411531	9·0	
Carte du Ciel ,, 1092,	1893, Feb. 1	2496	< 10·9	} But faintly visible on all, about 11·5 mag.
,, ,, ,, 1240,	,, ,, 20	2515	< 10·9	
,, ,, ,, 3405,	1895, Jan. 12	3206	< 10·9	
,, ,, ,, 3448,	,, Feb. 1	3226	< 10·9	

The visual observations are :—

		Julian Day.	Mag.
Cordoba,	1894, May 9	2412958	not seen.
,,	1895, Feb. 23	3248	9·5.
,,	1899, Mar. 8	4722	11·0.

Cape :—

	Julian Day.	Mag.	Colour.
1901, Mar. 13	2415092	8·8	7.
,, ,, 15	5094	8·6	
,, ,, 17	5096	9·0	7·5.
,, ,, 18	5097	8·9	6.
,, ,, 22	5101	8·8	6.
,, ,, 25	5104	8·9	6.
,, ,, 27	5106	8·8	6·5.
,, ,, 31	5110	8·8	
,, Apr. 4	5114	8·9	7.
,, ,, 7	5117	9·05	
,, ,, 8	5118	9·0	6.
,, ,, 11	5121	9·0	6.
,, ,, 13	5123	9·0	5.
,, ,, 15	5125	9·1	7.
,, ,, 21	5131	9·3	
,, ,, 26	5136	9·4	

	Julian Day.	Mag.	Colour.
1901, May 3	2415508	9·45	
,, ,, 5	5510	9·5	
,, ,, 15	5520	9·6	
,, ,, 19	5524	9·8	
,, ,, 22	5527	9·7	
,, ,, 27	5532	9·9	
,, June 2	5538	9·75	
,, ,, 8	5544	10·0	
,, ,, 12	5548	10·3	
,, ,, 15	5551	10·3	
,, ,, 25	5561	10·7	
,, July 8	5574	11·0	
,, ,, 20	5586	11·7	
,, Aug. 9	5606	< 11·0	
,, ,, 27	5624	< 9·9	
,, Oct. 5	5663	< 12·0	

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Cape—*continued.*

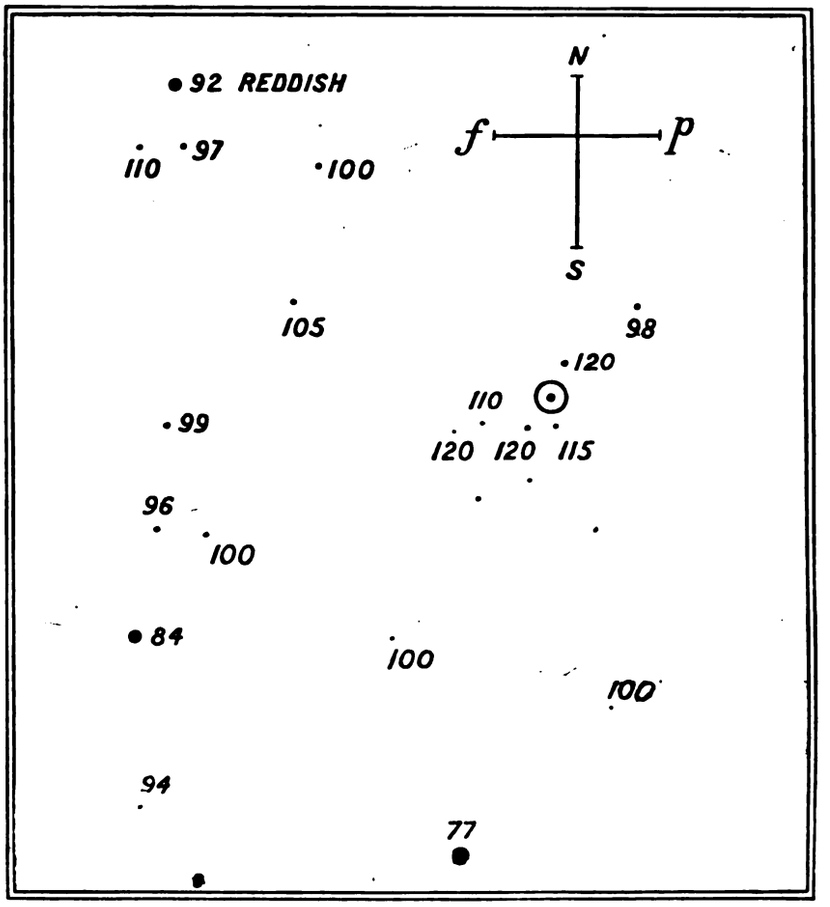
1901.	Julian Day.	Mag.	Colour.
Oct. 29	2415687	<11·2	
Nov. 23	5712	<10·7	
Dec. 18	5737	12·5	
,, 23	5742	<11·0	
,, 30	5749	<11·0	
1902.			
Jan. 6	5756	<11·5	
,, 17	5767	<11·8	
,, 19	5769	<11·3	
,, 26	5776	[12·5]	
,, 30	5780	<12·0	

1902.	Julian Day.	Mag.	Colour.
Feb. 8	2415789	<12·0	
,, 15	5796	12·0	good.
,, 25	5806	12·0	
Mar. 2	5811	12·0	
,, 7	5816	12·0	
,, 14	5823	12·0	
,, 17	5826	12·5	
,, 20	5829	12·2	
,, 30	5839	12·0	
Apr. 2	5842	11·7	
,, 9	5849	12·2	

1902.	Julian Day.	Mag.	Colour.
Apr. 13	2415853	[12·0]	or fainter.
,, 28	5868	10·2	
May 1	5871	9·8	
,, 6	5876	9·85	
,, 10	5880	9·6	
,, 14	5884	9·5	
,, 19	5889	9·2	
,, 26	5896	9·1	
,, 28	5898	9·1	
June 6	5907	9·05	
,, 10	5911	9·2	red 7.

1902.	Julian Day.	Mag.	Colour.
June 16	2415917	9·2	
,, 23	5924	9·3	
July 1	5932	9·3	
,, 7	5938	9·75	
,, 11	5942	9·8	
,, 14	5945	9·9	
,, 21	5952	9·65	
,, 26	5957	9·75	
Aug. 2	5964	9·9	
,, 6	5968	9·7	
,, 17	5979	9·8	

The comparison stars are indicated on the annexed chart.



NOTE.—The magnitudes on the map have been multiplied by ten.
The cross-bars are:—From N. to S. = 5′ in Dec. From *p.* to *f.* 30$^{secs.}$ in R.A.

If we now assume for maxima, the formula:—

$$\text{Maximum} = \text{J.D. } 2415455 + 437^{d}\ E.$$

we have:—

Observed Maxima.	Computed Maxima.	O.—C. d
J.D. 2411531	J.D. 2411522	+ 9
3248	3270	− 22
5457	5455	+ 2
5902	5892	+ 10
Range:—	8·6—9·0 mag. to [12·5] mag..	
Colour:—	6·3.	

This variable would thus seem to belong to the S Pictoris class.

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3418b. R CARINÆ

Lacaille 3932. U. A. 145 Carinæ. Cape 1880, No. 5158.

	R. A.	Dec.
1875.	$9^h\ 29^m\ 6^s$	$-62°\ 14'{\cdot}2$.
1900.	**9 29 44**	**−62 20·8.**

The discovery of this variable star is recorded by Dr B. A. Gould in the *Uran. Argent.* pp. 251–252.

It has been largely observed by Mr J. Tebbutt of Windsor, N.S.W.

Professor Kapteyn gives the magnitudes found on the C.P.D. plates in the *Astr. Nach.*, No. 2987 of 1890, Aug. 12.

The following naked eye observations have been made here :—

	Julian Day.	Mag.
1896, Mar. 10	2413629	5·7
,, Apr. 6	3656	6·1
,, ,, 14	3664	6·1
,, Dec. 18	3912	4·7
,, ,, 19	3913	4·6
,, ,, 20	3914	4·6
,, ,, 21	3915	4·7
,, ,, 22	3916	4·8
,, ,, 23	3917	4·8
,, ,, 24	3918	4·8
,, ,, 25	3919	4·8
,, ,, 26	3920	4·9
,, ,, 27	3921	4·9
,, ,, 28	3922	5·0
,, ,, 30	3924	5·0
,, ,, 31	3925	5·0
1897, Jan. 1	3926	4·8
,, ,, 2	3927	4·9

	Julian Day.	Mag.
1897, Jan. 4	2413929	4·8
,, ,, 5	3930	4·9
,, ,, 6	3931	4·9
,, ,, 7	3932	4·7
1899, July 2	4838	5·0
,, ,, 3	4839	5·0
,, ,, 6	4842	4·9
,, ,, 10	4846	4·8
,, ,, 12	4848	4·8
,, ,, 17	4853	4·7
,, ,, 19	4855	4·6
,, ,, 22	4858	4·3
,, ,, 26	4862	4·9
,, ,, 27	4863	5·0
,, ,, 28	4864	5·1
,, Aug. 4	4871	5·8
1901, Mar. 13	5457	4·7

A valuable paper entitled "Secular Variation in the Period of R Carinæ" by Dr A. W. Roberts, is published in the Monthly Notices of the *R.A.S.* vol. lxi. pp. 552–556.

3482. R R HYDRÆ.

C.P.D.—23°, No. 4672. In no other catalogue.

	R.A.	Dec.
1875.	$9^h\ 39^m\ 16^s$	$-23°\ 26'{\cdot}7$.
1900.	**9 40 25**	**−23 33·5.**

This star was suspected of variability by Professor Kapteyn, because of its absence from the Durchmusterungs of Thome and Ormond Stone, although it appears as 8·75 magnitude on three C.P.D. plates.

Its variability was proved in the *Astr. Nach.* No. 3426 of 1897, July 2. Dr Thome's negative results will be found in the *Astr. Nach.* No. 3447. In the *Astr. Journ.* No. 468 of 1899, Aug. 29, a preliminary period of 336 days is deduced. This star is also referred to in the *Astr. Journ.* No. 442 of 1898, Aug. 22.

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The observations, positive and negative, are as follows:—

					Julian Day	Mag.	
Washington,		1848, Mar. 29			2396116	...	(not observed).
Cordoba,		1888, Jan. 15			2410652	<10·1	
,,		,, ,, 17			2410654	<10·1	
,,		,, Feb. 2			2410670	<10·1	
C.P.D. Plate	2330,	1889, May 23			2411146	8·75	
,,	2342,	,, ,, 24			2411147	8·75	
,,	2354,	,, ,, 29			2411152	8·75	
C. du Ciel Plate	4052,	1896, Jan. 14, 15, 16	3 exposures		2413573-4-5	11·0	
,, ,,	4114,	,, Feb. 15, 24	2 ,,		2413605-14	inv.	most uncertain trace in one position.
,, ,,	4144,	,, Mar. 9, 10, 14, 16	4 ,,		2413628-9-33-5	,,	
,, ,,	4748,	1898, Feb. 10, 60m exposure.			2414331	13-14	

Cape visual observations:—

1897.	Julian Day.	Mag.	Col.
Feb. 10	2413966	<10·5	
,, 25	3981	<12·0	
Mar. 16	4000	inv.	
,, 20	4004	,,	
May 10	4055	,, ☾	
,, 22	4067	,,	
June 12	4088	11·8	
,, 14	4090	seen ○	
,, 26	4102	11·0	
July 2	4108	10·8	
,, 13	4119	10·3	
Aug. 2	4139	< 9·6	
Dec. 4	4263	inv.	
,, 17	4276	,,	
,, 23	4282	,,	
1898.			
Jan. 4	4294	,,	
,, 7	4297	<11	
,, 21	4311	<12	
Feb. 7	4328	<10	
,, 20	4341	inv.	
,, 22	4343	,,	
Mar. 10	4359	,,	
,, 14	4363	,,	
,, 25	4374	,,	
Apr. 13	4393	<12	
May 17	4427	10·3	
,, 19	4429	10·25	
,, 21	4431	10·0	
,, 26	4436	9·7	
,, 27	4437	9·7	
,, 31	4441	9·7	
June 2	4443	9·7	
,, 6	4447	9·7	
,, 8	4449	9·65	
,, 9	4450	9·65	
,, 14	4455	9·68	
,, 15	4456	9·6	
,, 18	4459	9·6	
,, 21	4462	9·55	
,, 22	4463	9·55	

1898.	Julian Day.	Mag.	Col.
June 23	2414464	9·55	
,, 25	4466	9·6	
,, 30	4471	9·55	
July 9	4480	9·35	
,, 18	4489	8·9	white.
,, 20	4491	8·9	
,, 24	4495	8·8	white.
,, 25	4496	8·7	
Aug. 4	4506	[8·6]	
Nov. 30	4624	inv.	
Dec. 14	4638	,,	
,, 31	4655	,,	
1899.			
Jan. 23	4678	,,	
Feb. 4	4690	,,	
,, 10	4696	<11·5	
,, 17	4703	inv.	
,, 26	4712	,,	
Mar. 17	4731	,,	
Apr. 23	4768	9·85	
May 11	4786	9·85	
,, 19	4794	9·9	
,, 21	4796	9·8	
,, 25	4800	9·75	
,, 27	4802	9·7	
,, 31	4806	9·65	
June 3	4809	9·6	
,, 6	4812	9·5	
,, 9	4815	9·5	
,, 10	4816	9·55	
,, 11	4817	9·5	
,, 13	4819	9·4	
,, 15	4821	9·4	
,, 18	4824	9·3	
,, 19	4825	9·3	
,, 24	4830	9·3	
,, 25	4831	9·3	
,, 27	4833	9·25	
,, 29	4835	9·05	
,, 30	4836	9·25	

1899.	Julian Day.	Mag.	Col.
July 2	2414838	9·0	
,, 4	4840	9·1	
,, 6	4842	9·1	
,, 10	4846	9·0	
,, 12	4848	8·95	
,, 17	4853	8·8	
,, 19	4855	8·9	
,, 22	4858	8·85	
,, 26	4862	8·9	
,, 27	4863	8·8	3.
,, 28	4864	8·8	
Aug. 4	4871	[8·8]	
,, 10	4877	9·05	
,, 14	4881	8·9	
,, 27	4894	9·1	
Sept. 30	4928	9·8	
Oct. 27	4955	[11·5]?	
Nov. 22	4981	inv.	
Dec. 7	4996	,,	
1900.			
Jan. 1	5021	<12·0	
Feb. 8	5059	<11	
,, 26	5077	<11·5	
Mar. 22	5101	10·7	
,, 27	5106	11·5	
Apr. 3	5113	10·5	
,, 16	5126	9·85	
May 3	5143	9·6	
,, 5	5145	9·6	
,, 21	5161	9·4	
,, 28	5168	9·1	
,, 29	5169	9·1	
June 8	5179	8·95	4.
,, 20	5191	8·6	
,, 23	5194	8·4	
,, 25	5196	8·5	
,, 27	5198	8·6	
July 3	5204	8·5	4.
,, 4	5205	8·5	
,, 8	5209	8·5	

1900.	Julian Day.	Mag.	Col.
July 24	2415225	8·8	
Aug. 1	5233	8·95	
,, 5	5237	9·3	
Nov. 13	5237	<12·0	
Dec. 5	5259	< 9·75	
,, 9	5263	< 9·85	
,, 26	5280	<12·0	
,, 29	5283	<11·5	
1901.			
Feb. 1	5417	<10·6	
,, 16	5432	10·7	
,, 19	5435	10·1	
,, 22	5438	10·3	
,, 24	5440	10·35	
Mar. 1	5445	10·3	
,, 4	5448	10·2	
,, 9	5453	10·1	
,, 13	5457	10·0	
,, 15	5459	9·9	
,, 23	5467	10·0	
,, 25	5469	9·9	
,, 27	5471	9·95	
,, 30	5474	9·9	
,, 31	5475	9·85	
Apr. 4	5479	9·8	
,, 7	5482	9·7	
,, 8	5483	9·65	
,, 11	5486	9·6	
,, 15	5490	9·5	
,, 26	5501	9·35	
May 5	5510	9·0	
,, 15	5520	8·75	4.
,, 17	5522	8·8	
,, 19	5524	8·6	4.
,, 22	5527	8·8	
,, 27	5532	8·95	
June 2	5538	8·8	
,, 8	5544	8·8	4.
,, 12	5548	8·95	
,, 15	5551	9·05	

The table below gives the dates of the observed maxima and the magnitude, together with the computed dates of maxima derived from the formula :—

J.D. 2415188 + $336^{d}\cdot8$ E.

Mag. at Maximum.	Date of Maximum.	Computed Date.	O.—C.
8·7	J.D. 2411146	J.D. 2411146	0^{d}
8·6	4500	4514	−14
8·8	4853	4851	+ 2
8·4	5193	5188	+ 5
8·7	5524	5524	0

Range of Magnitude:— $\frac{8\cdot4}{8\cdot8}$ to <13·0

Colour:— 3·8

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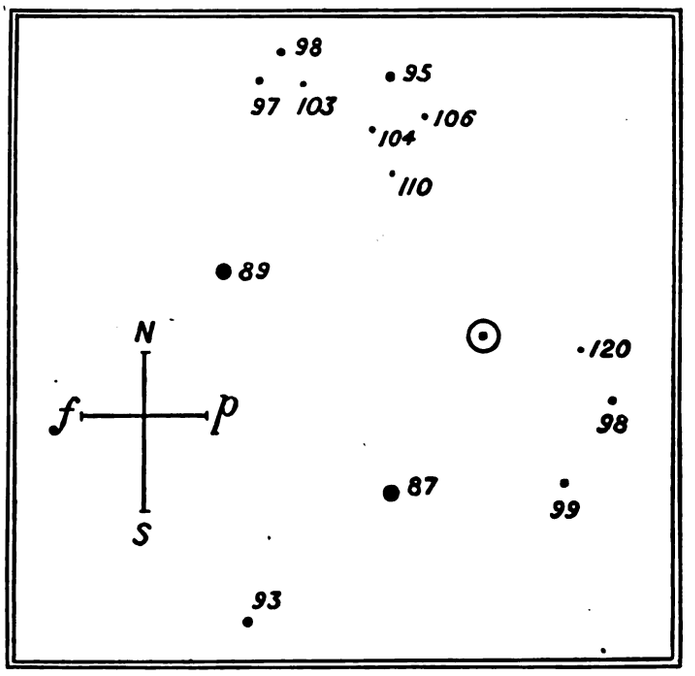
The following map shews the comparison stars used :—



NOTE.—The magnitudes on the map are multiplied by ten.
From N. to S. is 5′ in Dec., from *p.* to *f.* 20$^{secs.}$ in R.A.

The variation of this star bears resemblance to that of the following variables, the data of which have been taken from Dr Chandler's Third Catalogue of Variable Stars :—

	Range.			Colour.	Period.
	m		m		d
513 R Piscium	7·0 / 8·8	to	<13·0	2·0	344·15
806 o Ceti	1·7 / 5·0	to	8·0 / 9·5	5·9	331·6
2266 V Monocerotis	6·3 / 6·9	to	10·7<	3·4	332·0
2539 R Canis Min.	7·2 / 7·9	to	9·5 / 10·0	5·5	337·7
2684 S Canis Min.	7·2 / 8·0	to	10·5 / 12·7	4·1	330·3

	Range.			Colour.	Period.
	m		m		d
4377 T Virginis	8·0 / 8·8	to	10·0 / <13·5	4·1	339·5
5856 W Ophiuchi	8·9 / 9·5	to	<13·5	6·0	331·3
6624 T Serpentis	9·1 / 10·5	to	<13·5	2·0	342·3
6682 X Ophiuchi	6·8 / 7·0	to	9·0	5·0	335·0

and several other examples.

3536. Z VELORUM.

C.Z. IX. No. 3759. In no other catalogue.

	R. A.	Dec.
1875.	9^h 48^m 33^s	—53° 35′·5.
1900.	**9 49 25**	**—53 42 ·5.**

This star is No. 568 of Kapteyn's list of stars, "Contained in the Catalogues of Precision and missing on the plates" (C.P.D. Vol. III. p. 59).

The following seems to be a complete record of the observations of this variable star :—

		Julian Day.	Mag.
Cordoba,	1873, Apr. 30	2405279	9·5
C.P.D. Plate,	1890, ,, 1	11459	nil.
,,	,, ,, 15	11473	,,
,,	,, ,, ,,	11473	,,
,,	,, June 13	11532	,,

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Cape observations :—

1898.	Julian Day.	Mag.	Colour.
Mar. 8	2414357	inv.	
1900.			
Feb. 21	5072	9·4	6.
,, 23	5074	9·45	
,, 26	5077	9·3	6.
Mar. 3	5082	9·5	
,, 5	5084	9·5	
,, 6	5085	9·5	
,, 8	5087	9·55	
,, 10	5089	9·57	
,, 16	5095	9·75	
,, 18	5097	9·8	
,, 22	5101	9·8	7.
,, 25	5104	9·85	
,, 27	5106	9·9	
,, 30	5109	9·9	
Apr. 3	5113	10·0	
,, 16	5126	10·2	
,, 18	5128	10·5	
,, 21	5131	11·0	
,, 28	5138	11·0	
May 3	5143	11·0	
,, 5	5145	11·2	
,, 15	5155	11·7	
,, 21	5161	11·8	
,, 29	5169	12·0	
June 8	5179	12·0	
,, 20	5191	12·5	
July 3	5204	<12·0	
,, 24	5225	<12·0	

1900.	Julian Day.	Mag.	Colour.
Aug. 1	2415233	<11·7	
,, 14	5246	<11·7	
Nov. 13	5337	11·0	
Dec. 5	5359	10·6	
,, 9	5363	11·0	
,, 26	5380	10·5	
,, 29	5383	10·25	
1901.			
Jan. 8	5393	10·2	
,, 11	5396	10·2	
,, 16	5401	10·2	
,, 21	5406	10·0	
,, 26	5411	9·8	
Feb. 1	5417	9·7	
,, 9	5425	9·4	5.
,, 15	5431	9·35	
,, 19	5435	9·1	6.
,, 22	5438	9·05	
,, 24	5440	9·1	
Mar. 1	5445	9·05	
,, 4	5448	8·9	7.
,, 5	5449	8·9	
,, 9	5453	8·9	7.
,, 13	5457	9·0	8.
,, 18	5462	8·95	
,, 22	5466	8·9	
,, 25	5469	9·1	7.
,, 27	5471	9·2	8.
,, 31	5475	9·2	7.
Apr. 4	5479	9·1	

1901.	Julian Day.	Mag.	Colour.
Apr. 7	2415482	9·1	
,, 11	5486	9·35	
,, 21	5496	9·2	8.
,, 26	5501	9·4	8.
May 5	5510	9·6	
,, 19	5524	9·8	
June 2	5538	10·0	red.
,, 8	5544	10·5	
,, 15	5551	11·2	
,, 25	5561	11·6	
July 8	5574	11·7	
,, 20	5586	12·0	
Aug. 9	5606	<11·5	
Oct. 29	5687	<11·5	
Nov. 23	5712	<11·5	
Dec. 18	5737	12·0	
,, 23	5742	<11·5	
1902.			
Jan. 6	5756	11·5	These fluctuations seem real.
,, 10	5760	11·7	
,, 17	5767	11·5	
,, 19	5769	11·7	
,, 22	5772	11·3	
,, 24	5774	11·2	
,, 30	5780	11·1	
Feb. 8	5789	10·9	
,, 15	5796	10·0	
,, 17	5798	10·0	8.
,, 25	5806	10·1	
Mar. 2	5811	9·9	

1902.	Julian Day.	Mag.	Colour.
Mar. 7	2415816	10·1	
,, 14	5823	9·8	
,, 17	5826	9·9	
,, 20	5829	9·9	
,, 24	5833	9·8	
,, 30	5839	9·7	
Apr. 2	5842	9·6	
,, 9	5849	9·5	
,, 13	5853	9·55	
,, 16	5856	9·3	
,, 23	5863	9·0	
,, 28	5868	8·9	
May 1	5871	8·8	
,, 6	5876	9·0	red 6.
,, 10	5880	8·9	
,, 14	5884	9·0	red 8.
,, 19	5889	8·95	
,, 26	5896	8·9	
June 6	5907	9·2	
,, 10	5911	9·3	
,, 16	5917	9·3	
,, 23	5924	9·2	
July 1	5932	9·55	
,, 7	5938	9·8	
,, 11	5942	9·85	
,, 21	5952	10·0	
,, 26	5957	9·8	
Aug. 2	5964	10·6	
,, 6	5968	10·7	
,, 17	5979	10·3	

The observations obtained to date are satisfied by the following formula :—

$$\text{Maximum} = \text{J.D. } 2415050 + 407^{d}\,E.$$

as follows :—

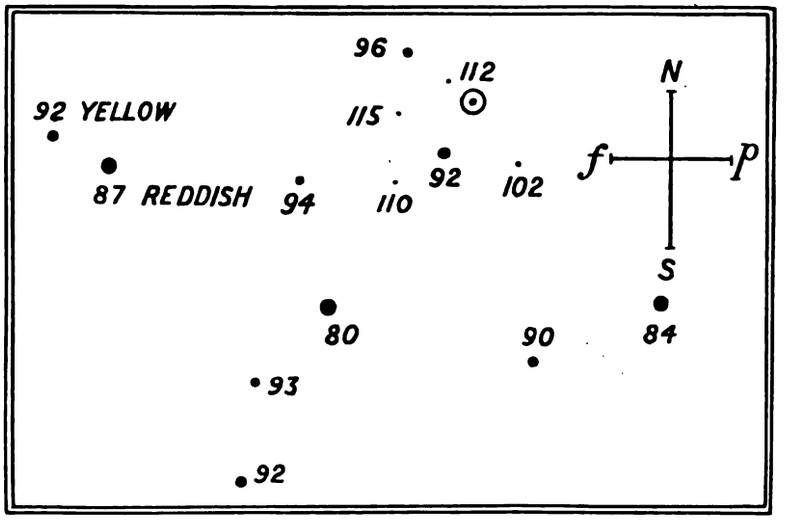
Observed Maxima.	Computed Maxima.	O.—C.
	d	d
J.D. 2405279 ± 40	J.D. 2405282	−3
15050 ± 20	15050	0
15448 ± 5	15457	−9
15871 ± 3	15864	+7

We also find :—

Range :— 8·8 mag. to 12·5 mag.
Colour :— 7·0.

Further observations of this star are required.

The region of this variable is shewn on the map.



NOTE.—The star magnitudes on the map have been multiplied by ten.
The cross-bars are :—From N. to S. = 5′ in Dec. From *p.* to *f.* = 30$^{secs.}$ in R.A.

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3573. R V CARINÆ.

C.P.D. —63°, No. 1243. In no other Catalogue.

	R.A.	Dec.
1875.	$9^h\ 54^m\ 50^s$	—63° 17′·9.
1900.	**9 55 33**	**—63 25 0.**

The discovery of the variability of this star is announced in the *Astr. Journ.* No. 468 of 1899, Aug. 29. Whilst examining this region in 1899, I could not find this star, but saw a 9·6 mag. star which is not contained in the C.P.D. about 53 secs. following its position. At first glance, it looked as if the C.P.D. place was in error and I wrote to Prof. Kapteyn to ask if the C.P.D. star really existed or if it had been the star following that was observed. Prof. Kapteyn replied, "I have looked up the star on the plates. The C.P.D. star is certainly there and not very faint on either plate. The other star is also on the plates but much fainter, being under the regular limit of the plates."

The observations are as follows :—

		Julian Day	Mag.
C.P.D. Plate, 1886, Mar. 5		2409971	9·9 [visually this might be taken as about 9·4].
,, ,, ,, ,, 17		2409983	,,

Cape :—

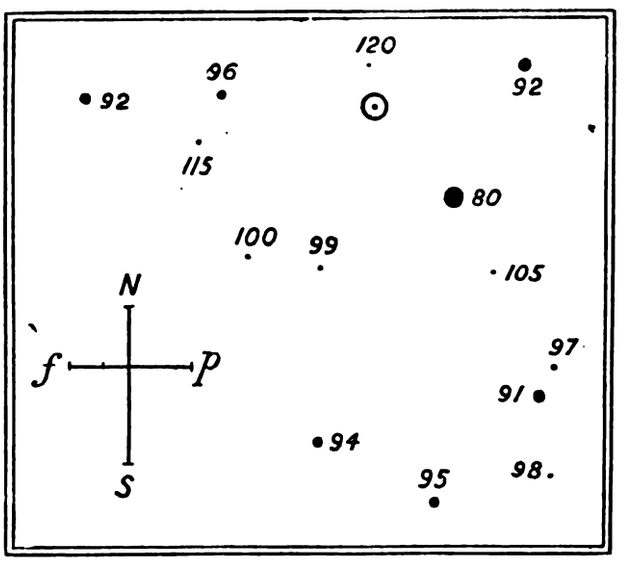
1899.	Julian Day.	Mag.
Feb. 17	2414703	inv.
,, 26	4712	,,
May 10	4785	9·5
,, 11	4786	9·45 red.
,, 14	4789	9·5
,, 19	4794	9·55
,, 26	4801	9·5
,, 31	4806	9·6
June 3	4809	9·6
,, 6	4812	9·7
,, 9	4815	9·75
,, 11	4817	9·75
,, 13	4819	9·8
,, 15	4821	10·0
,, 18	4824	10·0
,, 24	4830	10·3
,, 27	4833	10·3
,, 30	4836	10·4
July 12	4848	10·7
,, 19	4855	<11·0
,, 28	4864	<10·5
Sept. 30	4928	<11·5
Oct. 27	4955	inv.
,, 28	4956	,,
Nov. 11	4970	<11·0

1899.	Julian Day.	Mag.
Nov. 22	2414981	inv.
Dec. 7	4996	<11·5
,, 24	5013	<11·5
1900.		
Jan. 1	5021	12·0
,, 6	5026	11·8
,, 12	5032	<11·0
,, 17	5037	[inv.] ☾
,, 24	5044	inv.
,, 27	5047	<11·5
Feb. 8	5059	<11·0
,, 20	5071	12·0 ?
,, 26	5077	11·5 ?
Mar. 3	5082	<10·0
,, 6	5085	12·0 ?
,, 22	5101	12·0
,, 27	5106	<11
Apr. 3	5113	<10·5
,, 16	5126	9·85
,, 18	5128	9·8
,, 21	5131	9·8
,, 28	5138	9·6
May 3	5143	9·55
,, 5	5145	9·6
,, 15	5155	9·85

1900.	Julian Day.	Mag.
May 21	2415161	10·1
,, 24	5164	9·9
,, 29	5169	10·0
June 8	5179	10·5
,, 20	5191	11·5
,, 23	5194	<10·5
July 3	5204	12·0
,, 24	5225	<11·5
Aug. 1	5233	<10·0
,, 14	5246	<11·5
Nov. 13	5337	<12·0
Dec. 9	5363	<10·5
,, 26	5380	<12·0
1901.		
Jan. 16	5401	<11·5
Feb. 9	5425	<11·5
,, 16	5432	<10·7
Mar. 9	5453	<11·0
,, 18	5462	<11·0
,, 22	5466	<11·5
,, 25	5469	11·5
,, 26	5470	11·0
,, 27	5471	11·3
,, 30	5474	<11·0 ☾
,, 31	5475	[11·5] ☾

1901.	Julian Day.	Mag.
Apr. 4	2415479	<11·0
,, 7	5482	<11·5
,, 10	5485	<12·5
,, 13	5488	12·5
,, 15	5490	11·5
,, 21	5496	10·5
,, 23	5498	10·6
,, 26	5501	10·5
May 3	5508	9·85
,, 5	5510	9·85
,, 15	5520	9·75
,, 17	5522	9·8
,, 19	5524	9·8
,, 22	5527	9·75
,, 27	5532	9·85
June 2	5538	10·1
,, 8	5544	9·9
,, 12	5548	10·0
,, 15	5551	10·5
,, 25	5561	10·5
July 8	5574	10·8
,, 19	5585	12·0 ?
Aug. 9	5606	<11·0

The region of this variable is shewn on the accompanying map.



NOTE.—The magnitudes on the map have been multiplied by ten.
The cross-bars are :—From N. to S. = 5′ in Dec. From *p.* to *f.* = $40^{secs.}$ in R.A.

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This star is visible for so short a period in the 7-in. telescope that it is useless to plot the observations. The formula

J.D. 2415148 + 370^{d} E.

agrees with the observations recorded, far within their limits of error, as is shewn by the following table :—

Observation. Mag.	Date of inferred Maximum.	Calculated Maximum.	O.—C.
9·4	J.D. 2409971	J.D. 2409968	+3^{d}
9·4	14780	14778	+2
9·6	15140	15148	−8
9·75	15520	15518	+2

Range :— $\frac{9\cdot4^{m}}{9\cdot7}$ to <13·0^{m}.

The colour was only once noted as "red."

3669. W VELORUM.

C.P.D.—53°, No. 3515. In no other catalogue.

1875.	10^{h} 10^{m} 35^{s}.	−53° 51′·5.
1900.	**10 11 30**	**−53 58 ·9.**

Professor J. C. Kapteyn announced the variability of this star, as a result of his examination of the C.P.D. plates, in the *Astr. Nach.* No. 3389 of 1896, Nov. 30. Confirmation from visual observations made here appeared in the *Astr. Journ.* No. 468 of 1899, Aug, 29.

The photographic observations are :—

			Julian Day.	Mag.
C.P.D. Plate No.	603,	1887, Mar. 18	2410349	8·65
,,	610,	,, ,, 22	0353	8·65
,,	2079,	1889, Feb. 5	1039	<9·6
,,	2111,	,, ,, 13	1047	<9·6
,,	2634,	1890, April 15	1473	10·5
,,	2717,	,, June 13	1532	8·65

The Cape visual observations are :—

1899.	Julian Day.	Mag.	Colour.
Feb. 20	2414706	9·1	7.
,, 26	4712	9·15	
Mar. 17	4731	9·5	
,, 21	4735	9·55	
May 11	4786	[11·0]	
,, 27	4802	<10·0	
June 6	4812	10·6	
,, 18	4824	[11·0]	
,, 25	4831	<10·5	
July 19	4855	<10·6	
,, 28	4864	inv.	
Sept. 30	4928	[11·2]	
Oct. 27	4955	[10·5]	
Nov. 22	4981	9·7	
Dec. 7	4996	9·65	7·5.
,, 13	5002	9·6	
,, 16	5005	9·6	
,, 24	5013	9·5	7·5.
,, 30	5019	9·35	
1900.			
Jan. 1	5021	9·0	7.

1900.	Julian Day.	Mag.	Colour.
Jan. 6	2415026	9·2	7.
,, 12	5032	9·0	7.
,, 16	5036	8·9	7.
,, 18	5038	8·9	
,, 22	5042	8·7	
,, 24	5044	8·65	
,, 26	5046	8·6	
,, 27	5047	8·5	6.
,, 31	5051	8·5	7·5.
Feb. 2	5053	8·2	8.
,, 6	5057	8·5	8.
,, 8	5059	8·5	
,, 14	5065	8·3	8.
,, 20	5071	8·3	7.
,, 26	5077	8·6	8.
Mar. 5	5084	8·65	8.
,, 8	5087	8·7	
,, 10	5089	8·6	8
,, 16	5095	8·85	
,, 22	5101	8·7	

1900.	Julian Day.	Mag.	Colour.
Mar. 27	2415106	8·9	
,, 30	5109	8·9	8.
Apr. 3	5113	8·85	
,, 16	5126	9·2	
,, 21	5131	9·35	
,, 28	5138	9·6	
May 3	5143	9·65	
,, 5	5145	9·6	
,, 21	5161	9·7	
,, 27	5167	9·8	
June 8	5179	10·3	
,, 20	5191	10·8	
July 3	5204	[11·0]	
,, 24	5225	<11·5	
Aug. 14	5246	<11·5	
Nov. 13	5337	11·0	
Dec. 5	5359	<10·3	
1901.			
Jan. 8	5393	9·5	7.

1901.	Julian Day.	Mag.	Colour.
Jan. 21	2415406	9·1	red.
,, 27	5412	8·7	7·5.
Feb. 1	5417	8·6	5.
,, 9	5425	8·4	8.
,, 15	5431	8·55	
,, 19	5435	8·6	8.
,, 22	5438	8·3	8.
,, 24	5440	8·7	
Mar. 1	5445	8·6	
,, 4	5448	8·4	
,, 5	5449	8·55	
,, 9	5453	8·65	
,, 13	5457	8·75	
,, 22	5466	8·7	
,, 25	5469	8·9	8.
,, 27	5471	8·7	9.
,, 31	5475	9·0	
Apr. 4	5479	9·1	
,, 8	5483	9·05	8.

[ ] signifies with this star, "difficult to identify when faint."

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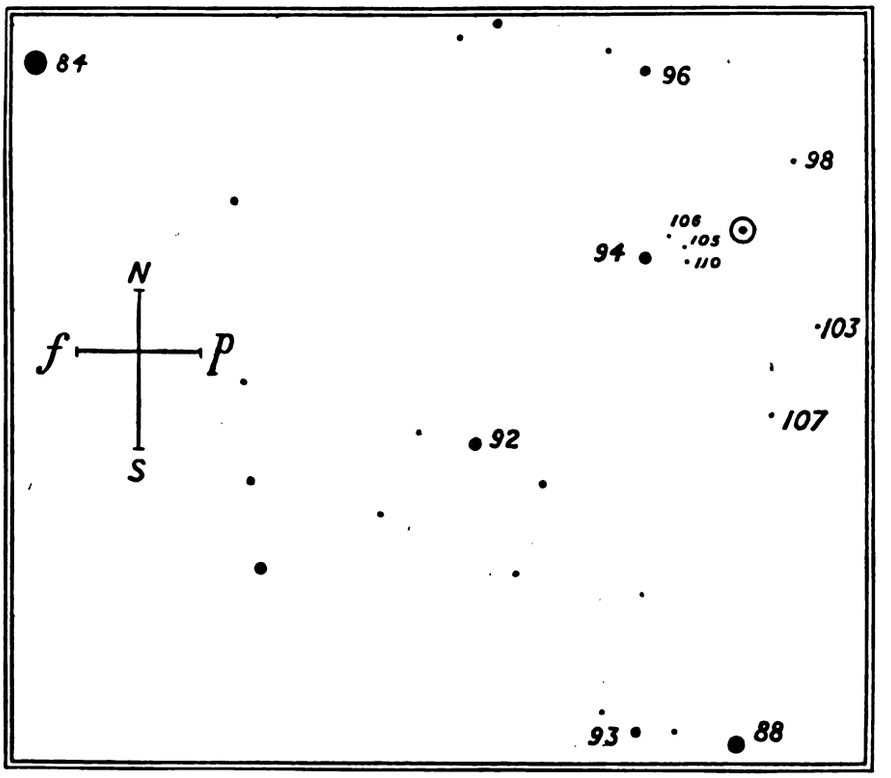
The comparison stars used with this variable star are shewn on the accompanying map.



The magnitudes of the comparison stars have been multiplied by ten.
From N. to S. is 5′ of declination, from *p.* to *f.* is $24^{secs.}$ of R.A.

Comparison between maxima based on the above observations and on computation based on the formula :—

J.D. 2415045 + $390^{d}\cdot5$ E.

is as follows :—

Observed Maxima. J.D.	Calculated Maxima. J.D.	O.—C.
2410349	2410359	-10^{d}
1532	1530	+ 2
4666	4655	+11
5053	5045	+ 8
5426	5435	− 9

This exhibit is well within the limits of error to which this red star is liable.

Range of Magnitude :— $\frac{8\cdot2}{8\cdot4}$ to $<12\cdot0$.
Colour = $7\cdot5$.

Dr Roberts secured 10 observations of this variable star in 1899—see *Astr. Journ.* Nos. 491 – 492.

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3707. R R VELORUM.

C.P.D. — 41°, No. 4511 = Cor. D.M. — 41°, No. 5804, Mag. 9·9.

	R.A.	Dec.
1875.	$10^h\ 16^m\ 44^s$	−41° 43′·8.
1900.	**10 17 48**	**−41 51·3.**

Suspected by Professor J. C. Kapteyn from the evidence of the C.P.D, plates quoted below. The variability was fully proved by visual observation here in 1899 and 1900. It is an *Algol-type* variable star.

The photographic observations are :—

		Julian Day.	Mag.
C.P.D. Plate No. 2101	1889, Feb. 12	2411046	9·65
,, 2257	,, Apr. 23	1116	9·65
,, 2675	1890, May 14	1502	10·45 *
,, 2725	,, June 16	1535	9·6

These were communicated by Professor Kapteyn—the following were estimated by myself from the plates already taken here for the *Carte du Ciel* work.

		Julian Day.	Mag.
C. du Ciel. Plate No. 958	1893, Jan. 7	2412471	9·7
,, ,, 1520	,, May 13	2597	9·8
,, ,, 2556	1894, Feb. 22	2882	9·8
,, ,, 2577	,, ,, 26	2886	10·1
,, ,, 2640	,, Mar. 21	2909	9·8
,, ,, 4788	1898, ,, 9	4358	9·8

		Julian Day.	Mag.
C. du Ciel. Plate No. 4827	1898, Apr. 7	2414387	9·8
,, ,, 4828	,, ,, ,,	,,	9·8
,, ,, 4829	,, ,, ,,	,,	9·8
,, ,, 4839	,, ,, 20	4400	9·9
,, ,, 4854	,, May 7	4417	9·8
,, ,, 5204	1899, Feb. 8	4694	9·8

The visual observations are :—

1899.	C.M.T.	Julian Day.	Mag.	
Feb. 20		2414706	10·5	good.
,, 26		4712	10·1	
Mar. 17		4731	10·0	
May 2		4777	9·8	
,, 11		4786	9·8	
,, 19		4794	9·9	
,, 27		4802	9·9	
June 6		4812	9·6	
,, 9		4815	9·8	
,, 18		4824	9·9	
,, 19	(new map and mag. scale).	4825	9·8	
,, 24		4830	9·8	
,, 25		4831	9·7	
,, 27		4833	9·8	
July 26		4862	9·9	
1900.				
Jan. 6		5026	9·7	
Apr. 28		138	10·0	
May 3		143	9·9	
,, 21		161	10·0	
,, 29		169	10·1	
June 8		179	10·6	good.
,, 9		180	10·1	
,, 23		194	10·0	
,, 24		195	10·1	
,, 25		196	10·15	
,, ,,		,,	10·1	3 hrs. later.
,, 26		197	10·1	
,, 27		198	10·1	
,, ,,		,,	10·1	2 hrs. later.
,, 29		200	10·1	
July 1		202	10·1	
,, 3	6 40	204	10·2	
,, ,,	6 59	,,	10·3	
,, ,,	7 21	,,	10·2	
,, ,,	8 18	,,	10·3	
,, 4	6 15	205	10·7	
,, ,,	6 48	,,	10·5	
,, ,,	7 8	,,	10·4	

1900.	C.M.T.	Julian Day.	Mag.
July 6	8 42	2415207	10·25
,, 7	7 59	208	10·1
,, 8	7 43	209	10·1
,, 24		225	10·2
,, 25		226	10·1
Aug. 1		233	10·1
,, 3		235	10·1
,, 4		236	10·1
,, 7		239	10·1
,, 8		240	10·2
,, 14		246	10·1
Nov. 13	13 21	537	10·1
Dec. 9	11 16	363	10·1
1901.			
Jan. 27	8 13±	412	10·1
Feb. 1	10 26	417	10·1
,, 9	8 8	425	10·1
,, 15	15 25	431	10·3
,, ,,	16 20	,,	10·3
,, 16	9 2	432	10·1
,, 19	8 10	435	10·0
,, 22	7 56	438	10·0
,, 23	7 38	439	10·0
,, 24	7 49	440	10·0
,, 25	9 32	441	10·0
,, 26	8 34	442	10·0
,, 27	10 14	443	9·95
Mar. 1	7 24	445	10·1
,, 4	8 15	448	10·0
,, 5	9 58	449	9·9
,, 6	9 36	450	9·95
,, 9	7 42	453	9·95
,, 10	10 19	454	10·0
,, 13	8 5	457	10·1
,, 15	7 25	459	10·2
,, ,,	8 2	,,	10·2
,, 17	10 53	461	10·1
,, 18	9 24	462	10·1
,, 22	9 11	466	10·1

1901.	C.M.T.	Julian Day.	Mag.
Mar. 23	7 34	2415467	9·9
,, 25	6 46	469	10·1
,, 26	8 16	470	10·4
,, ,,	8 52	,,	10·8
,, ,,	9 18	,,	10·9
,, 27	7 0	471	10·25
,, ,,	7 28	,,	10·1
,, 29	8 13	473	10·15
,, 30	7 31	474	10·1
,, ,,	9 6	,,	10·0
,, 31	7 42	475	10·0
Apr. 1	10 36	476	10·15
,, 2	9 9	477	10·1
,, 3	11 9	478	10·1
,, 4	7 20	479	10·0
,, 6	7 48	481	10·1
,, 7	6 48	482	10·1
,, ,,	7 47	,,	10·0
,, 8	6 31	483	10·1
,, 10	10 41	485	10·1
,, 11	7 0	486	10·1
,, 12	7 38	487	10·1
,, 13	7 35±	488	9·95
,, 14	9 5	489	10·1
,, 15	7 9	490	9·95
,, 16	7 56	491	10·0	cloud.
,, 17	9 45	492	10·1	
,, 21	7 2	496	10·45	
,, ,,	7 30	,,	10·4	
,, ,,	8 22	,,	10·6	
,, 23	7 45	498	9·95	
,, 26	11 25	501	10·2	
,, ,,	11 34	,,	10·2	
,, ,,	11 41	,,	10·3	
,, ,,	11 55	,,	10·3	
,, ,,	12 8	,,	10·3	
,, ,,	12 37	,,	10·2	
,, ,,	12 46	,,	10·3	
,, ,,	12 55	,,	10·1	

1901.	C.M.T.	Julian Day.	Mag.
Apr. 27	6 39	2415502	9·95
May 3	7 26	508	10·05
,, 5	8 28	510	10·1
,, 15	7 31	520	10·1
,, 16	7 9	521	10·0
,, 17	7 22	522	10·85
,, ,,	7 40	,,	10·8
,, ,,	8 20	,,	10·45
,, ,,	8 33	,,	10·35
,, 22	6 31	527	10·0
,, ,,	7 9	,,	10·1
,, ,,	7 39	,,	10·0
,, ,,	10 50	,,	10·3
,, ,,	11 21	,,	10·3
,, ,,	11 23	,,	10·3
,, 27	6 56	532	10·15
June 2	9 55	538	10·2
,, ,,	10 12	,,	10·2
,, 8	6 43	544	10·05
,, 9	6 33	545	10·1
,, 12	6 39	548	10·8
,, ,,	7 25	,,	10·45
,, ,,	8 23	,,	10·3
,, 14	6 41	550	10·2
,, 15	7 3	551	10·2
,, 21	6 23±	557	10·1
,, 22	7 31	558	10·1
,, 25	7 6	561	10·4
,, ,,	7 54	,,	10·2
,, 29	7 11	565	10·25
July 8	7 56	574	10·2
,, 9	6 11	575	10·25
,, 10	7 50	576	10·1
,, 12	6 19	578	10·1
,, 14	6 14	580	10·15
,, 16	6 13	582	10·2
,, 19	8 3	585	10·9
,, 20	6 54	586	10·2
,, 21	6 59	587	10·2

* Plate 2675 was examined under the microscope, the image and film were perfectly normal.

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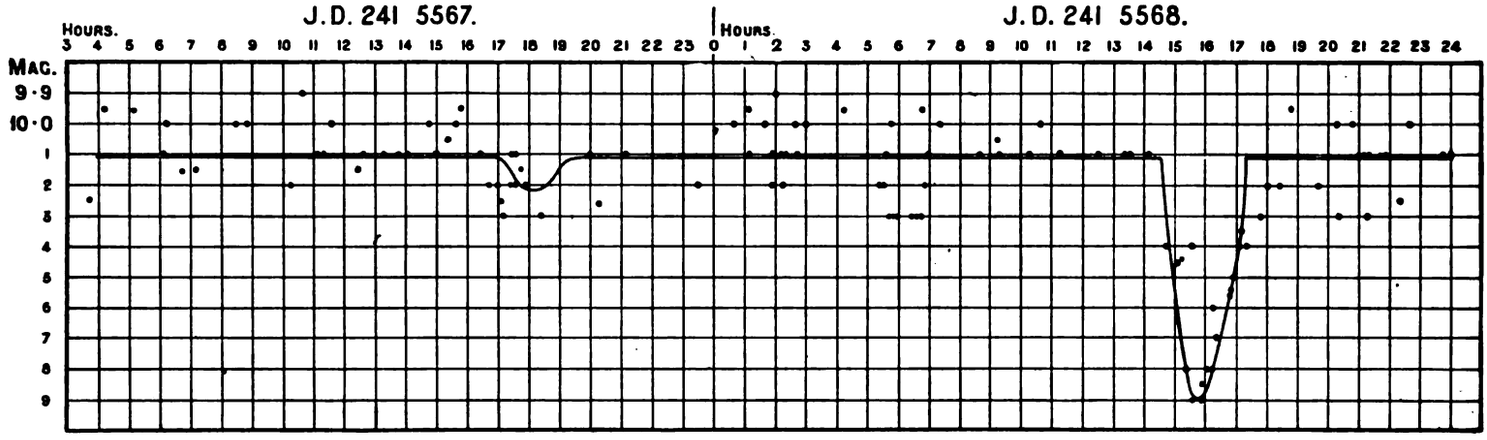
The timed visual observations have been brought up to 1901, July 1–2 = J.D. 2415567–8 with a period of $1^d\ 20^h\ 30^m\ 3^s$ and are plotted on the diagram



The observations give mimima on the following dates :—

Julian Day.	Interval.
2411502	
4706	3204 days
5179	473 ,,
5205	26 ,,
5470	265 ,,
	26 ,,

Julian Day.	Interval.
2415496	
5522	26 days
5548	26 ,,
5585	37 ,,

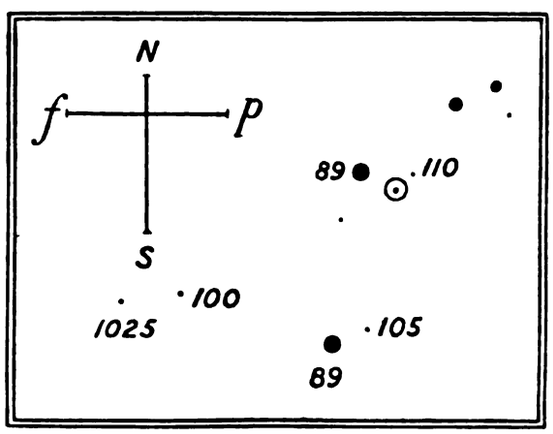
But it was not easy to find the real period from such long intervals. Dr A. W. Roberts of Lovedale, who had kindly put the star on his observing list, found that the period was about $1^d\ 20^h\ 30^m$ and he was good enough to communicate it. This period not only accords with the above mimima but also with the other Cape observations.

The extreme dates covered by the Cape observations give an interval of 4083 days in which it is assumed 2202 periods were completed—it is thus found that the period is

$1^d\ 20^h\ 30^m\ 2^s{\cdot}9 = 1^d{\cdot}8542$ [$\pm\ 1^s{\cdot}8$] Minimum :— 1901, June 12 $5^h\ 11^m$ G.M.T.

Range in magnitude :— $10^m{\cdot}1$ to $10^m{\cdot}9$

The star can be identified by the aid of the following map.



NOTE.—The magnitudes on the map have been multiplied by 10 or 100. The cross bar from *p.* to *f.* is $30^{secs.}$ in R.A.—from N. to S. is 5′ in dec.

The duration of the light change is about $2^h\ 50^m$. There is a very slight indication of an inferior minimum about $21^h\ 50^m$ before the chief minimum, but it is under 0·2 mag. a quantity but little greater than the errors of observation.

Since the above was written, Dr Roberts has published his observations and the elements founded on them, in his paper on *Certain considerations regarding Algol variation with special reflection to C.P.D.*—41°,4511 ; *Proc. Roy. Soc. Edin.*, vol. xxiv, part 2. The agreement between the two sets of elements is excellent.

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3847. η ARGÛS.

1875. $10^h\ 40^m\ 13^s{\cdot}1$ —59° 1′·7.
1900. 10 41 10·8 —59 9·5.

Recent discoveries by Sir David Gill and Professor E. C. Pickering shew that the photographic spectrum of η Argûs resembles that of the "New Stars." It seemed therefore desirable to arrange in one table the curious light changes of this star. It has been possible to do this with some amount of success. The history of this star is divided into two stages—the first, when the star was not suspected of variation. This period stretches from the time of Ptolemy to the observations of Burchell who seems to have been the first to find any irregularity in the star's light. The contemporaneous meridian observers of that epoch, however, do not seem to have noticed this variation and they probably, as Rumker openly avows he did, used Lacaille's magnitude without thought of change. It is a former director of this observatory (Henderson) who shews that had the star been bright in the time of Ptolemy, that it would, no doubt, have been observed by him, as the chief stars of the Southern Cross, Centaurus, etc., which culminate at Alexandria at about the same altitude as η Argûs, are to be found in the Almagest. As the next recorded observation (by Halley in 1677) is of the 4th magnitude, it is perhaps a fair inference to suppose that at the time of Ptolemy, the star was even fainter. There may thus be a certain amount of continuity in the increase of this star's light for many centuries, but of course this is all most uncertain.

At the time of Humboldt's travels in South America (about 1800) η Argûs was certainly inferior to α Centauri, as Humboldt remarks that after Canopus, α Centauri is the next brightest star in the southern sky.

The second stage commences with the observations of Burchell and Sir John Herschel. Fortunately their observations and the greater part of those of later observers are referred to known stars, instead of to imaginary standards, so that it is possible to exhibit the data in well known scales of magnitude. The scales adopted in this reduction are :—when η Argûs was a naked eye object, the scale of the South Meridian Photometry (Harvard) ; when telescopic, the scale of Gould's Uranometria Argentina. The greater part of the observations available is so good that I have felt it advisable to omit nearly all the numerous meridian observations of magnitude of the last 70 years. In many cases these do not pretend to be estimations of magnitude, the magnitudes published in the catalogues being in many cases taken from other sources—thus in the 1879 meridian observations made at the Sydney Observatory the magnitude of η Argûs is recorded 2, whereas observations at Cordoba about this epoch shew that the magnitude was really $7\frac{1}{2}$.

The following table contains the results finally arrived at, after a careful consideration of each observation. A few examples will shew how the figures have been derived.

Herschel, Cape Observations, p. 362, 1836, Apr. 4.

Star	d	Mag. in S.M.P.	Resulting mag. of η Argus.
η Argûs	93·2	...	
β Crucis	95·2	1·49	1·4

Herschel, Cape Observations, p. 362, 1836, Apr. 27.

β Crucis	85·2	1·49	
η Argûs	88·3	...	1·6
		Means. 1836·4	1·52

Herschel, Cape Observations, p. 315, 1837, Mar. 10.

η Argûs nearly equal to Spica (S.M.P. = 1·1)	1·3

Maclear, Cape Observations, p. 35.

1842, Dec. 29.	η Argûs = β Centauri, which in S.M.P. = 0·8	0·8
1843, Jan. 1–15	" = ½ (Procyon + Rigel), these in the Harvard Photometries are 0·54 and 0·35.	0·4
	Means. 1843·0	$0{\cdot}6_2$

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TABLE.

Magnitude of η Argûs.

Authority or Reference.	Observer.	Date.	Mag.	Remarks.
Henderson, M.N. xiv. 132	Ptolemy	A.D. 135±	nil.	Has all the chief stars of the Cross and Centaurus.
Herschel, C.O., p. 36	Halley	1677	4	
Winnecke, A.N. 1224	Noel	1685-9	2	Exact date uncertain, not later than 1689.
Cælum Stell. Aust.	Lacaille	1751	2	
Cape Observations, p. 36	Burchell	1811-15	...	Not noticed as bright.
Star Catalogue	Fallows	1822	2	Miscalled σ.
,, ,,	Brisbane	1822-26	2	
Cape Observations, p. 36	Burchell	1825-26	...	Not noticed as bright.
Star Catalogue	Rumker	1826-7	2	From Lacaille.
Cape Observations, p. 35	Burchell	1827·1	1·0	= α Crucis.
,, ,, ,, 36	,,	1828·2	2	
Star Catalogue	Johnson	1829-33	2	
,, ,,	Taylor	1831-32	2	
Cape Observations, p. 33	Herschel	1834	>2<1	Ruddy or yellow, as α Centauri and Arcturus.
,, ,, ,,	,,	1836·1	$1\cdot4_3$	
,, ,, ,,	,,	1836·2	$1\cdot3_2$	
,, ,, ,,	,,	1836·4	$1\cdot5_2$	
,, ,, ,,	,,	1836·9	$1\cdot4_3$	
,, ,, ,,	,,	1837·2	$1\cdot3_1$	
,, ,, ,,	,,	1837·3	...	Brighter than 1·7.
,, ,, ,,	,,	1837·9	$0\cdot3_1$	
,, ,, ,,	,,	1838·0	$0\cdot2_4$	
,, ,, ,,	,,	1838·1	$0\cdot3_3$	
,, ,, ,,	,,	1838·2	$0\cdot4_4$	
,, ,, ,,	,,	1838·3	$1\cdot0_1$	
,, ,, p. 35	Maclear	1843·0	$0\cdot6_3$	
,, ,, ,,	,,	1843·2	$-1\cdot0_3$	
,, ,, p. 34	Mackay	1843, Mar. 19	$+1\cdot5_1$	See also M.N. vi. 9.
,, ,, ,,	,,	1843, ,, 24	$-0\cdot1_1$	Colour like Arcturus.
,, ,, ,,	,,	1843, ,, 28	...	Fainter.
,, ,, p. 36	,,	1843, Apr. 11-14	−0·3	
M.N., vi. p. 9	,,	1844·7	...	Fainter than Canopus. (Also M.N., x. p. 142).
M.N., xvi. p. 136	Gilliss	1850·2	$-0\cdot1_3$	Yellowish red light more marked than Mars.
,, ,, ,,	,,	1850·3	$0\cdot0_3$	Ruddiness = Aldebaran.
,, ,, ,,	,,	1850·6	$+0\cdot1_4$	Not so ruddy as Arcturus.
,, ,, ,,	,,	1851·7	$0\cdot2_2$	
,, ,, ,,	,,	1852·3	$0\cdot2_2$	
M.N., xxii. p. 47	Powell	1854·0	$0\cdot8_2$	
,, xxxi. ,, 211	Tebbutt	1854·5	$0\cdot9_1$	
,, xxii. ,, 47	Powell	1856·0	$0\cdot7_2$	
A.N., 1054	Moesta	1856·3	0·6	Yellow or reddish yellow.
M.N., xxiv. p. 6	Abbott	1856·3	$0\cdot2_1$	
,, xxii. ,, 47	Powell	1858·4	$1\cdot7_4$	
,, xxiv. ,, 6	Abbott	1858·5	$1\cdot6_4$	
,, ,, ,,	,,	1859·2	$2\cdot3_3$	
,, xxii. p. 47	Powell	1859·3	$2\cdot0_2$	
,, ,, ,,	,,	1860·0	$2\cdot8_2$	
,, ,, ,,	,,	1860·2	$3\cdot0_4$	
,, xxxi. p. 211	Tebbutt	1860·4	$3\cdot0_2$	
,, xxiv. ,, 6	Abbott	1860·9	$3\cdot2_1$	
,, xxii. ,, 48	Powell	1861·1	$3\cdot2_4$	
,, xxiv. ,, 6	Abbott	1861·5	$3\cdot5_7$	
,, xxxi. ,, 211	Tebbutt	1862·5	$3\cdot8_{15}$	
,, xxiv. ,, 6	Abbott	1862·5	$3\cdot5_5$	
,, xxxi. ,, 211	Tebbutt	1863·3	$4\cdot0_3$	
,, xxiv. ,, 6	Abbott	1863·3	$4\cdot8_2$	
Meridian Observations	Melbourne	1864·2	$4\cdot8_3$	
M.N., xxxi. p. 211	Tebbutt	1864·4	$5\cdot1_6$	
,, ,, ,,	,,	1865·2	$5\cdot3_4$	
,, xxviii. p. 201.	Abbott	1865·3	5·5	
,, xxxi. p. 211	Tebbutt	1866·3	$6\cdot0_3$	
,, ,, ,,	,,	1867·1	$6\cdot6_{10}$	
,, ,, ,,	,,	1868·0	$6\cdot9_2$	In this year 4 Melbourne Observations at the Merid. Circle give $4^m\cdot9$ which is evidently too bright.
,, ,, ,,	,,	1868·2	$6\cdot7_2$	
,, ,, ,,	,,	1868·5	$6\cdot9_{13}$	
,, ,, ,,	,,	1869·1	$6\cdot8_3$	
,, ,, ,,	,,	1869·3	$7\cdot0_3$	1869·5, Ellery 7^m, Le Sueur $6\frac{1}{2}^m$, M.N., xxxi., 227.
,, ,, ,,	,,	1869·7	$7\cdot1_{10}$	
,, ,, p. 227	Abbott	1870·0	7·5	
,, ,, ,, 211	Tebbutt	1870·1	$6\cdot8_6$	
,, ,, ,,	,,	1870·5	$7\cdot0_{10}$	
Uran. Arg. 256	Cordoba	1870·9	6·6	
M.N., xxxi. p. 211	Tebbutt	1871·0	$6\cdot8_3$	
Uran. Arg. 256	Cordoba	1871·2	6·8	

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TABLE.

Magnitude of η Argûs—continued.

Authority or Reference.	Observer.	Date.	Mag.	Remarks.
M.N., xxxvii. p. 281	Tebbutt	1871·3	$6·8_{10}$	The mags. in M.N. xxxvii. p. 281 have had 0·45 added to them to bring them to the U.A. scale.
,, ,, ,,	,,	1871·7	$6·9_{8}$	
,, ,, ,,	,,	1872·4	$6·9_{10}$	
,, ,, ,,	,,	1873·3	$7·0_{12}$	
,, ,, ,,	,,	1874·4	$7·0_{12}$	
,, ,, ,,	,,	1875·5	$7·1_{8}$	
,, ,, ,,	,,	1876·4	$7·2_{9}$	
Uran. Arg., 256	Cordoba	1878·9	7·4	
Merid. Obs., 89–90	,,	1882·3	$7·6_{10}$	
M.N., lx. p. 223	Markwick	1884·2	$7·5_{8}$	
A.N., 2922	Cordoba	1885·0	7·6	
M.N., xlvi. p. 341	Finlay	1886·2	7·6	
A.N., 2922	Cordoba	1886·5	7·6	Dull scarlet.
,, ,,	Thome	1887·2	7·6	Bright orange.
Observatory, 1888-299	Tebbutt	1887·3	7·5	
A.N., 2922	Cordoba	1887·4	7·5	
,, ,,	,,	1887·5	7·4	
,, ,,	,,	1887·6	7·2	
,, ,,	,,	1888·1	7·1	
Observatory, 1888–299	Tebbutt	1888·4	7·0	
A.N., 2922	Thome	1888·4	$6·9_{2}$	
,, ,,	,,	1888·7	$6·8_{2}$	
,, ,,	,,	1889·4	$6·7_{3}$	
J.B. A.A., iii. p. 423	Roberts	1891·6	$6·8_{4}$	
,, ,, ,,	,,	1892·4	$6·9_{3}$	
M.N., lvii. p. 155	Innes	1896·4	$7·6_{4}$	Orange-yellow.
A.J., 399, 119	See	1897·2	$7·6_{5}$	Distinctly reddish.
M.N., lix. p. 570	Innes	1899·5	$7·7_{4}$	Colour 7.
,, lxii. 430	,,	1900·2	$7·7_{3}$	,, 6·3.
,, ,, ,,	,,	1901·2	$7·8_{3}$	,, 6·8.
,, ,, ,,	,,	1902·1	$7·7_{3}$	,, 6·5.
Photographic Magnitudes.				
Cordoba Photos, p. 282	Gould	1872·9	8·0	P.—V. = $1^{m}·1$.
,, ,,	,,	1882·3	9·2	,, = 1 ·6.
C.P.D., vol. iii. p. 266	Kapteyn	1886·2	8·4	,, = 0 ·8.

The observations since 1836 will be found plotted overleaf. The most interesting part of the curve during which time the star was actually at its brightest, viz., 1838–1850 is sadly lacking in observations. Since 1850, the downward course of the star's magnitude was fairly continuous until 1868. Since 1868 the loss of light has been inconsiderable.

We learn from Mr Tebbutt's annual reports that he intends to re-reduce his published observations and to add to them many others made in recent years. This fine series of nearly 50 years made by one observer will be unique, and it will bridge over the gap between 1892 and 1896. Further unpublished observations have also been made by Dr Roberts at Lovedale and by Dr Thome at Cordoba.

Since the above was written, the following unpublished observations have been found amongst the Cape MSS. :—

Observer.	Date.	Mag.	Remarks.
Scully,	1822, Feb. 20	6	On the day before, this observer has ι Argûs = 7^{m}, δ Chamel. = 5^{m}.
Fallows ?	,, Mar. 15 !	2	Also μ and θ Argûs = 3^{m}.
,,	1823, ,, 17	2	
Sir T. Maclear,	1842, ,, 19	1·3	Less than Rigel, greater than α Hydræ, less than α Crucis.
G. W. H. Maclear,	1866, May 14, 21, 22	4·3	Compared with ι Argûs, α Hydræ and Regulus.
J. C. Sinfield,	1867, Mar. 28	5½	ω Argûs assumed = 4^{m}.
G. W. H. Maclear,	,, ,, 30	5½	
,,	,, Apr. 6, 7 ?	5½	
J. C. Sinfield,	,, ,, 10	5½	

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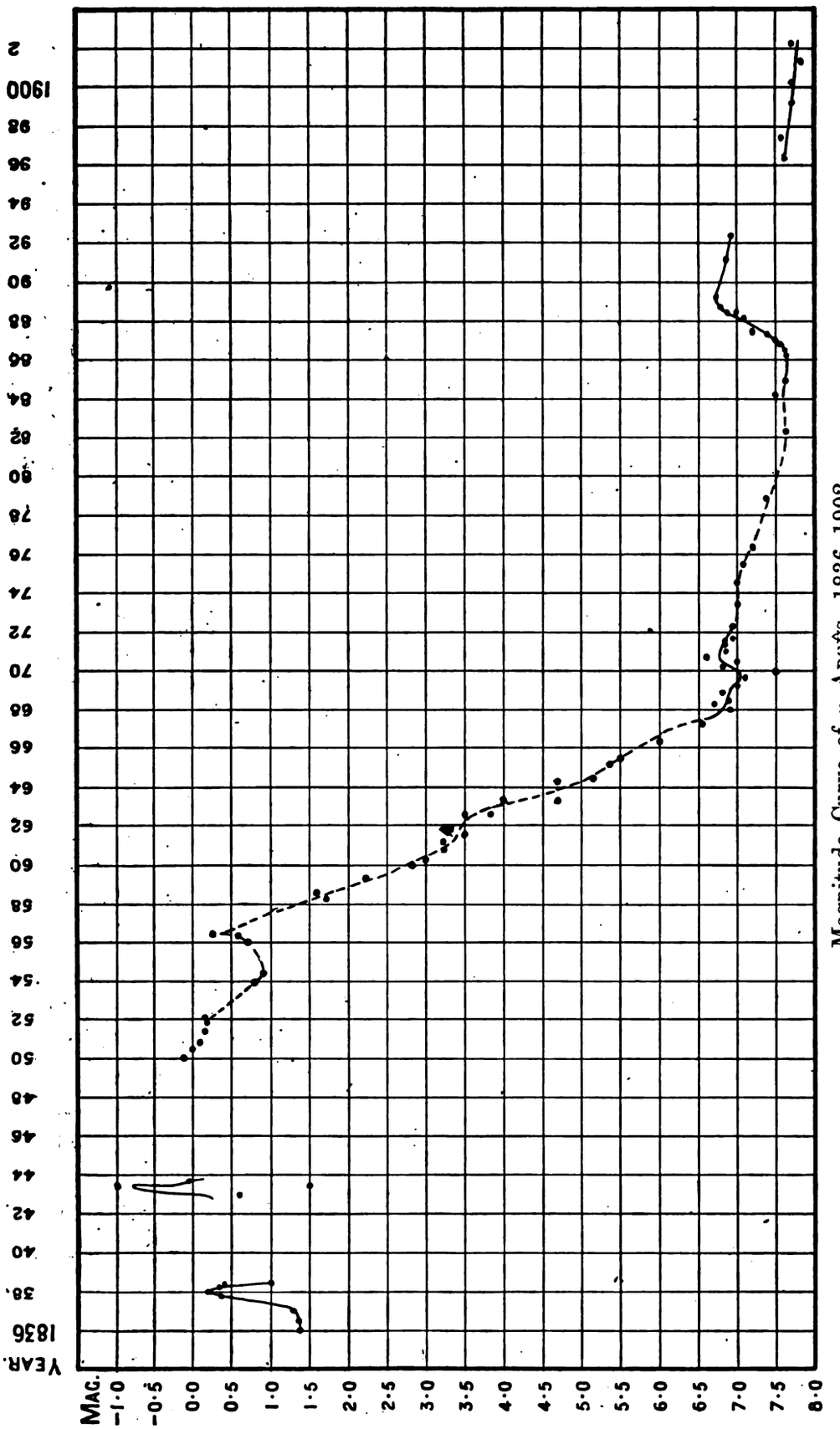

Magnitude Curve of η ARGÛS, 1836–1902.

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3879. R S HYDRÆ.

Cordoba DM.—27°, No. 7724. In no other catalogue.

	R.A.	Dec.
1875.	$10^h\ 45^m\ 22^s{\cdot}2$	$-27°\ 58'{\cdot}2$.
1900.	**10 46 33·2**	**−28 6·1.**

This star is No. 121 of List II. *bis.* of "Stars 9·0 or brighter, in the first two parts of Thome's Cordoba DM. and missing on the plates" by Professor Kapteyn. (See C.P.D., Vol. III. p. 76 of the introduction.)

Its variability was proved here and announced in the *Astr. Nach.* No. 3441 of 1897, Aug., 16. Further particulars were published in the *Astr. Journs.* Nos. 442 and 468 of 1898, Aug. 22 and 1899, Aug. 29.

All the observations found are given below :—

		Julian Day.	Mag.
Cordoba,	1886, Mar. 4	2409970	8·2
,,	,, Dec. 29	10270	9·5
,,	1888, Jan. 12	10649	8·75
C.P.D. Plate No. 1386,	,, June 20	10809	nil.
C.P.D. Plate No. 1414,	1888, July 11	2410830	nil.
,, ,, 1424,	,, ,, 12	10831	,,
Cordoba,	1891, May 4	11857	invis. ?

The observations made here are :—

1897.	Julian Day.	Mag.	Colour.
Apr. 2	2414017	8·7	o.
,, 3	4018	8·9	3.
,, 11	4026	8·7	3.
June 12	4088	9·5	
,, 14	4090	6·5	
,, 29	4105	9·9	
Aug. 1	4138	< 10·5	
,, 5	4142	< 10·2	
1898.			
Jan. 7	4297	11·0	
,, 30	4320	9·9	
Feb. 8	4329	10·0	
,, 13	4334	9·8	
,, 20	4341	9·75	
,, 22	4343	9·5	
,, 28	4349	9·2	
Mar. 2	4351	9·2	

1898.	Julian Day.	Mag.	Colour.
Mar. 10	2414359	8·9	
,, 14	4363	8·9	
,, 17	4366	8·95	
,, 25	4374	8·8	
Apr. 3	4383	8·5	
,, 13	4393	8·7	
,, 26	4406	9·1	
,, 29	4409	9·2	
May 26	4436	9·7	
June 6	4447	9·9	
,, 9	4450	9·9	
,, 14	4455	10·1	
,, 18	4459	10·0	
,, 22	4463	10·5	
,, 25	4466	< 10·5	
,, 30	4471	11	±
July 9	4480	11·5	

1898.	Julian Day.	Mag.	Colour.
July 18	2414489	< 10·5	
,, 25	4496	inv.	
Aug. 4	4506	< 9·5	
,, 12	4514	< 10·0	
Nov. 30	4624	10·1	
Dec. 14	4638	9·75	
1899.			
Jan. 23	4678	9·35	
Feb. 4	4690	9·0	
,, 10	4696	8·9	3.
,, 17	4703	8·4	
,, 26	4712	8·5	
Mar. 17	4731	8·85	
,, 21	4735	8·8	
May 11	4786	10·5 good.	
,, 19	4794	10·5	
,, 27	4802	< 10·2	

1899.	Julian Day.	Mag.	Colour.
June 3	2414809	10·7	
,, 10	4816	12 ?	
,, 18	4824	< 10·8	
,, 24	4830	< 10·5	
,, 27	4833	inv.	
July 19	4855	< 10·5	
,, 26	4862	10·6	
Oct. 27	4955	10·2	
Dec. 16	5005	9·6	
1900.			
Jan. 1	502	8·8	
,, 6	5026	8·75	
,, 18	5038	8·4	
,, 27	5047	8·3	
Feb. 2	5052	8·9	7·5.
,, 8	5059	8·8	
,, 20	5071	9·05	

This star can be identified by means of the map on page 80B.

It should be remarked that the magnitudes on the map are equal to those of the Cordoba DM. + 0·3 on the average. I am now inclined to think that the magnitudes would have been better represented by the addition of 0·6. Only three of the stars on the map are to be found in the C.P.D., viz.,

Cordoba DM.	C.P.D.	Map.
$8{\cdot}3^m$	$9{\cdot}3^m$	$8{\cdot}6^m$
9·1	10·2	9·3
8·7	9·4	8·9

The Cape observations have been plotted on the diagram on page 81B.

Maxima are indicated on the following dates :—

Julian Date.	Probable uncertainty.
2409970	± 5 days.
10649	± 20 ,,
14045	10 ,,
2414380	± 5 days.
14710	5 ,,
15040	5 ,,

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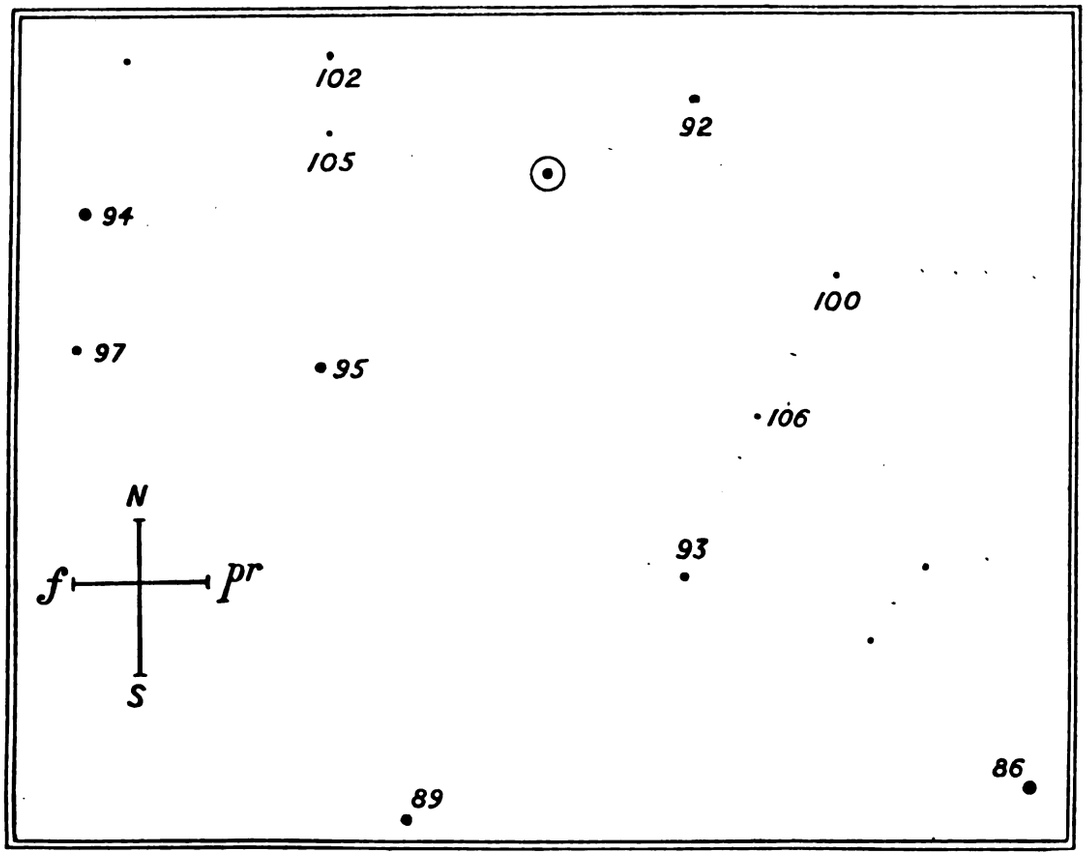
It will be seen that the Cape observations yield a period of

329 days

but the inclusion of the two Cordoba maxima gives a period of

338 days

which is probably a nearer approximation to the mean period.



NOTE.—The magnitudes have been multiplied by ten.
The cross-bars are $20^{secs.}$ long in R.A. and 5′ deep in Dec.

Putting

Maximum = 1886, March 4 = J.D. $2409970 + 338^d + 40^d \sin (E \times 12°)$

we have

Observation.	Computation.	O.—C.
J.D. 2409970 ± 5^d	2409970	0^d
10649 ± 20	10662	−13
14045 ± 10	14050	− 5
14380 ± 5	14380	0
14710 ± 5	14710	0
15040 ± 5	15040	0

The observations shew that the minimum is beyond the reach of the 7-inch refractor.

Range :— $8{\cdot}3^m - 12{\cdot}^m$?
Colour :— 3·3 = yellow

* As explained before the scale is too bright, the maximum is probably not brighter than $8{\cdot}6^m$

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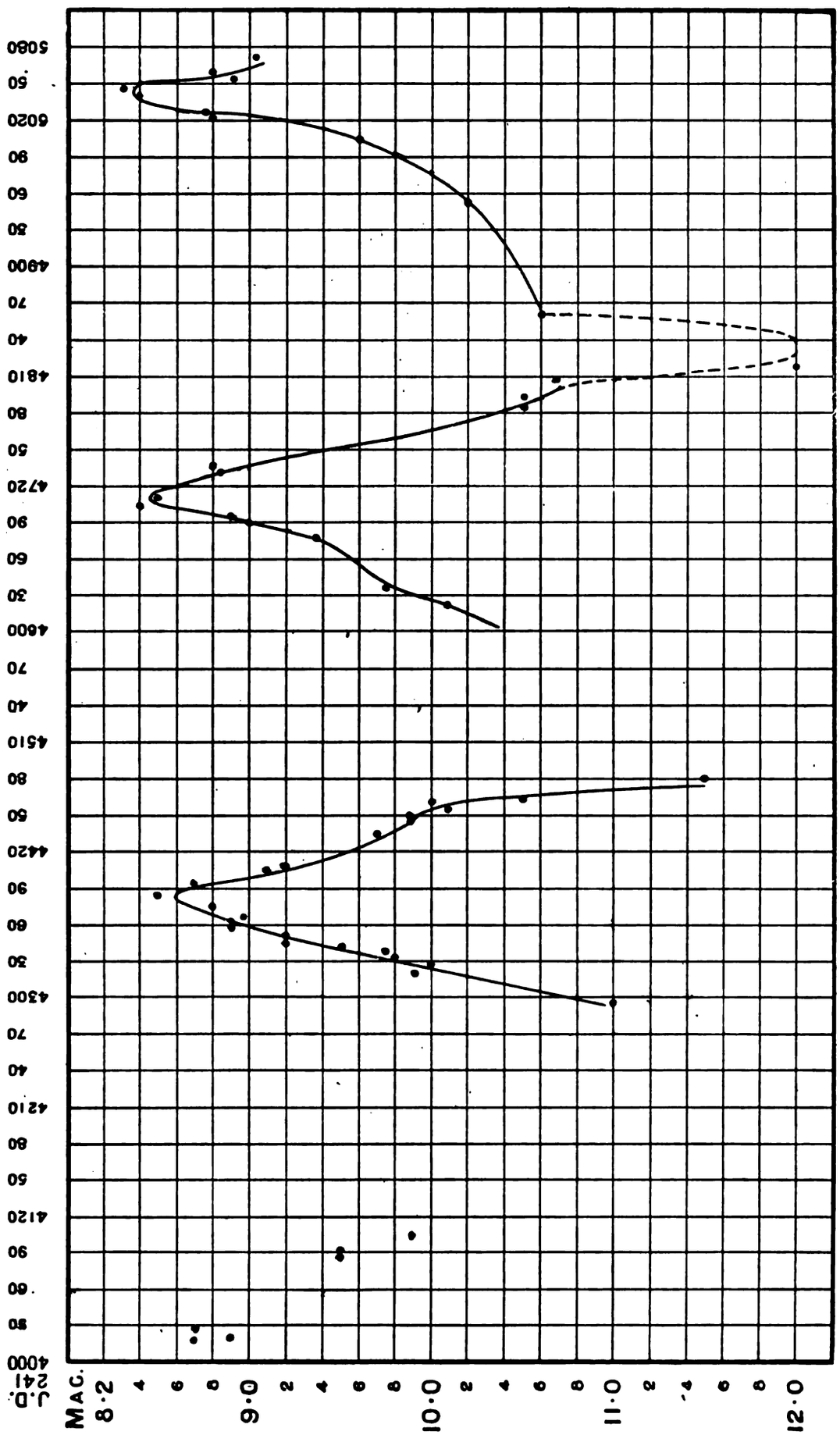

Magnitude Curve of 1879. RS HYDRÆ.

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4055. RY CARINÆ.

In no catalogue.

1875.	$11^h\ 14^m\ 44^s$	$-61°\ 10'$.
1900.	**11 15 49**	**−61 19.**

The map for this star is given under 4057 RS Centauri. The two star are only about 1′ of arc apart. This star was first noticed here on the 12th June 1901. The observations are :—

	Julian Day.	Mag.
1901, June 12	2415548	9·9
,, ,, 13	5549	9·85
,, ,, 14	5550	9·9
,, ,, 15	5551	9·85
,, ,, 21	5557	9·85
,, ,, 25	5561	9·85
,, ,, 29	5565	9·8
,, July 8	5574	9·85
,, ,, 10	5576	10·0
,, ,, 12	5578	10·0
,, ,, 14	5580	9·85
,, ,, 16	5582	9·9

	Julian Day.	Mag.
1901, July 19	2415585	10·0
,, ,, 23	5589	10·0
,, ,, 27	5593	10·5
,, Aug. 9	5606	11·0
,, ,, 10	5607	11·2
,, ,, 14	5611	11·5
,, ,, 18	5615	12·0
,, ,, 24	5621	12·0
,, ,, 30	5627	<11·2
,, Sept. 6	5634	<12·0
,, Oct. 29	5687	<11·2
,, Nov. 22	5711	<10·5

The star has also been looked for, with the 7-inch telescope, on thirty-seven occasions between 1901, Dec. 18, and 1902, Aug. 17, without being seen.

Professor E. C. Pickering's powerful assistance was invoked and he kindly communicated the following results of an examination of plates taken at Arequipa.

	Mag.	
1901, May 27	<12·0	These are the limiting magnitudes of the plates and the star was not shewn on any of them.
,, June 7	<10·2	
,, ,, ,,	<10·9	
,, ,, 11	<11·1	
,, ,, 15	<10·8	
,, July 23	<11·2	

Professor Pickering remarks that the last plate does not shew RS Centauri. On that date the star was not fainter visually than 10·9 mag. as is proved by the observations on p. 83B. Professor Pickering further examined plates taken on 2nd May 1893, 4th Nov. 1895, and 13th and 27th May 1901, on none of which was RY Carinæ visible.

My knowledge of the region of this object precludes any chance of mistake; moreover, the position of the star was determined relatively to R S Centauri itself. To account for its non-visibility on the Arequipa plates, it is necessary to suppose that the star is very red or that it is remarkably poor in actinic light. If very red, it is probable that, although never brighter than 9·8 mag., the colour would have been recorded here, as R Volantis has been recorded as red on several occasions when it was fainter than 9·8 mag. (*e.g.*, p. 46B).

This star is either a *Nova*, or a variable which at its maximum seldom attains the 10th magnitude.

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4057. RS CENTAURI.

In no catalogue.

	R.A.	Dec.
1875.	$11^h\ 15^m\ 1^s$	$-61°\ 11'·3$.
1900.	**11 16 6**	**−61 19·6.**

The discovery of this interesting variable star is chronicled in the Harvard College Observatory Circular No. 7 of 5 June 1896. It was found by Mrs Fleming in her regular examination of the Draper Memorial photographs, this star having bright hydrogen lines. The Harvard Circular shews that in the case of this particular star 70 plates were referred to on which the magnitude was found to range from 9·2 to < 12·9. The following formula for maxima was given :—

J.D. 2411100 + 162 E.

Some Cape results have been published in the *Astr. Journ.* Nos. 442 and 468 of 1898, Aug 22 and 1899, Aug 29.

The Cape observations are :—

1898.	Julian Day.	Mag.
Mar. 21	2414370	8·5 *r.*
,, 25	4374	8·6 ,,
,, 30	4379	8·7 ,,
Apr. 3	4383	9·0
,, 7	4387	8·9
,, 12	4392	9·2
,, 20	4400	9·7
,, 25	4405	9·7
,, 29	4409	9·8
May 2	4412	10·1
,, 13	4423	10·3
,, 15	4425	10·9
,, 19	4429	11·5
,, 26	4436	11·0
June 6	4447	inv.
,, 14	4455	,,
July 19	4490	10·4
,, 25	4496	9·75
Aug. 4	4506	9·0 *r.*
,, 12	4514	8·8 ,,
,, 15	4517	9·1
,, 19	4521	9·1
,, 24	4526	9·0
,, 31	4533	8·9
Nov. 30	4624	< 10·5
Dec. 14	4638	inv.
1899.		
Jan. 24	4679	9·1
Feb. 4	4690	8·8 c. 7.
,, 10	4696	8·9 *r.*
,, 17	4703	8·7
,, 27	4713	9·3
Mar. 17	4731	9·5
,, 21	4735	9·6
Apr. 28	4773	inv.
May 11	4786	,,
June 6	4812	10·7
,, 9	4815	10·7
,, 10	4816	10·7
,, 13	4819	10·5
,, 15	4821	10·3
,, 18	4824	9·85
,, 24	4830	9·4
,, 25	4831	9·2
,, 26	4832	9·2 c. 8.
,, 27	4833	9·0
,, 29	4835	9·0

1899.	Julian Day.	Mag.
June 30	2414836	8·95
July 1	4837	8·9
,, 2	4838	8·9
,, 4	4840	8·8
,, 5	4841	8·8
,, 10	4846	8·5 c. 7.
,, 12	4848	8·5
,, 17	4853	8·5
,, 18	4854	8·45
,, 19	4855	8·4 c. 4.
,, 22	4858	8·5
,, 26	4862	8·5
,, 27	4863	8·6
,, 28	4864	8·65
Aug. 4	4871	8·7
,, 9	4876	8·5
,, 10	4877	8·55
,, 14	4881	8·5
,, 17	4884	8·5
Sept. 1	4899	9·35
,, 2	4900	9·3 *r.*
,, 6	4904	9·6
,, 9	4907	9·7
,, 30	4928	11·2
Oct. 27	4955	inv.
Nov. 22	4981	10·2
Dec. 7	4996	9·4
,, 13	5002	9·4
,, 16	5005	9·0
,, 24	5013	9·0
,, 30	5019	8·9
1900.		
Jan. 1	5021	8·8
,, 6	5026	8·7
,, 8	5028	8·8
,, 12	5032	8·7 c. 6.
,, 16	5036	8·7
,, 18	5038	8·7
,, 23	5043	8·7 c. 6·5.
,, 27	5047	8·8
,, 31	5051	8·8
Feb. 6	5057	9·1
,, 8	5059	9·2
,, 14	5065	9·3
,, 20	5071	9·8
,, 26	5077	9·6 *r.*
Mar. 6	5085	10·2

1900.	Julian Day.	Mag.
Mar. 8	2415087	10·5
,, 10	5089	11·0
,, 16	5095	10·9
,, 22	5101	11·2
,, 27	5106	11·4
,, 31	5110	11·6
Apr. 3	5113	12·0
,, 16	5126	12·0
,, 28	5139	11·3
May 3	5143	10·8
,, 5	5145	10·2
,, 15	5155	9·85
,, 21	5161	9·4
,, 24	5164	9·3
,, 27	5167	8·95
,, 29	5169	8·85
,, 31.	5171	8·65
June 2	5173	8·5
,, 5	5176	8·45
,, 8	5179	7·8
,, 9	5180	8·0
,, 20	5191	7·9
,, 23	5194	7·85
,, 24	5195	8·1
,, 25	5196	7·95
July 3	5204	8·15
,, 4	5205	8·0
,, 6	5207	8·5
,, 8	5209	8·4
,, 24	5225	8·9
Aug. 1	5233	9·0
,, 3	5235	9·25
,, 7	5239	9·4
,, 14	5246	10·0
,, 18	5250	9·9
,, 28	5260	< 11·0
Nov. 13	5337	9·9
Dec. 9	5363	9·05
1901.		
Jan. 8	5393	9·25
,, 27	5412	9·9
Feb. 1	5417	11·3
,, 9	5425	< 12·0
,, 15	5431	< 11·6
,, 22	5438	< 12·5
Mar. 4	5448	< 11·2
,, 9	5453	< 11·5

1901.	Julian Day.	Mag.
Mar. 13	2415457	< 12·5
,, 18	5462	< 11·6
,, 22	5466	< 11·5
,, 25	5469	11·9
,, 27	5471	[12]
,, 29	5473	< 11·8
,, 31	5475	< 11·6
Apr. 4	5479	< 11·3
,, 7	5482	[12·0]
,, 10	5485	11·5
,, 11	5486	11·1
,, 13	5488	11·2
,, 15	5490	10·9
,, 21	5496	10·0
,, 23	5498	9·75
,, 27	5502	9·55
May 3	5508	8·95
,, 5	5510	8·9
,, 15	5520	8·65
,, 17	5522	8·5
,, 19	5524	8·55
,, 22	5527	8·55
,, 27	5532	8·4
June 2	5538	8·5
,, 8	5544	8·6
,, 12	5548	8·75
,, 13	5549	8·65
,, 14	5550	8·7
,, 15	5551	8·75
,, 21	5557	8·75
,, 25	5561	8·95
,, 29	5565	9·4
July 8	5574	9·7
,, 10	5576	9·9
,, 12	5578	9·9
,, 14	5580	9·9
,, 16	5582	10·0
,, 19	5585	10·5
,, 23	5589	10·7
,, 27	5593	11·3
Aug. 9	5606	< 11·0
,, 10	5607	12·5
,, 14	5611	< 12·0
,, 18	5615	inv.
,, 24	5621	,,
,, 30	5627	< 11·2
Sept. 6	5634	< 12·0

1901.	Julian Day.	Mag.
Oct. 29	2415687	8·4
Nov. 22	5711	8·8
Dec. 18	5737	9·4
,, 23	5742	9·75
1902.		
Jan. 6	5756	10·0
,, 17	5767	11·1
,, 19	5769	11·5
,, 30	5780	inv.
Feb. 8	5789	,,
,, 15	5796	< 12
,, 25	5806	11·0
Mar. 2	5811	10·8
,, 7	5816	10·9
,, 14	5823	9·5
,, 17	5826	9·4
,, 20	5829	8·9
,, 24	5833	8·4
,, 30	5839	8·3
Apr. 2	5842	8·2
,, 9	5849	8·0
,, 13	5853	8·2
,, 16	5856	8·2 c. 7.
,, 23	5863	8·2
,, 28	5868	8·3
May 1	5871	8·2
,, 6	5876	8·3
,, 10	5880	8·2 c. 6.
,, 19	5889	8·45
,, 26	5896	8·7
June 6	5907	9·4
,, 10	5911	9·8
,, 16	5917	9·9
,, 23	5924	10·5
July 1	5932	12·0
,, 7	5938	< 11·2
,, 11	5942	< 11·5
,, 26	5956	< 12·0
Aug. 6	5968	< 12·0
,, 17	5979	< 11·5

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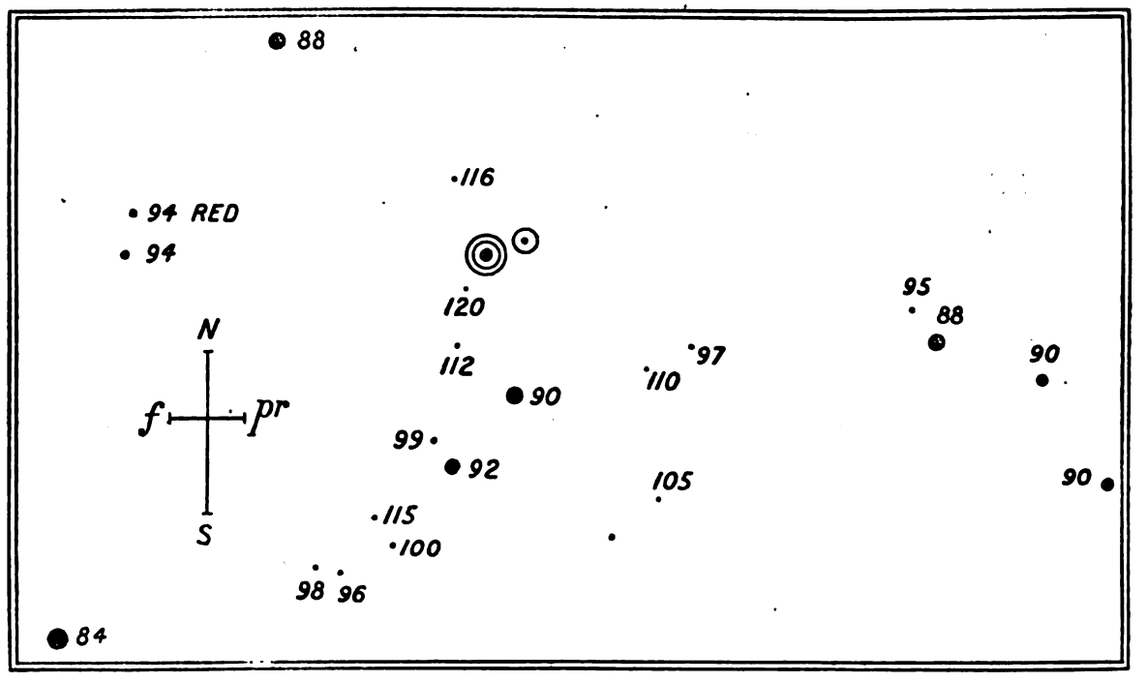
These observations to Sept. 1901 are plotted on the diagram on page 85B. Cape maxima are :—

Mag.	Date.	Uncertainty.	Intervals.
8·3	Julian Day 2414360	10d	180d
8·6	4540	15	155
8·7	4695	15	164
8·5	4859	3	173
8·7	5032	5	157

Mag.	Date.	Uncertainty.	Intervals.
7·9	Julian Day 2415189	5d	186d
8·6	5375	20	155
8·4	5530	5	319
8·1	5849	3	



● = 4057. RS CENTAURI. ⊙ = 4055. RY CARINÆ.

NOTE.—Only sufficient stars to identify the variable stars are plotted. The magnitudes have been multiplied by ten. The cross-bars are :—From N. to S. = 5′ in Dec., *p.* to *f.* = 20^{secs}· in R.A.

Assuming J.D. 2415030 + 164d E. for maxima, we have the following :—

Calculated Maxima. Julian Day	O.—C.	Calculated Maxima. Julian Day	O.—C.
2411094	+ 6d	2415030	+ 2d
4374	−14	5194	− 5
4538	+ 2	5358	+17
4702	− 7	5522	+ 8
4866	− 7	5850	+ 1

Dr Roberts has published the results of observations made by himself at Lovedale, C.C., in the *Astr. Journ.* Nos. 491–2. A comparison is as follows :—

	Range.	Colour.	M—m.	Maxima.
Roberts,	8·4m — 12·0m ?	—	80d ?	J.D. 2415032 + 186d E.
Cape,	$\frac{7·9}{8·7}$ — $\frac{12·0}{13·0}$?	6·4	70 ?	2415030 + 164. ,,

Dr Roberts has since communicated a new determination of the period, viz. 165d.

Some stars of about the same period are :—

	Mags.	Colour.	M—m.	Period.	
466 U Piscium	$\frac{9·5}{10·0}$ — $\frac{14·5}{15·0}$	...	83d	172·7d.	From Dr Chandler's 3rd Catalogue.
1717 V Tauri	$\frac{8·3}{9·4}$ — <13·5	3·3	82	170·1.	
2080 R Columbæ	7·9 — 11·4<	...	...	164·0 ?	
5583 X Libræ	$\frac{9·5}{9·9}$ — 14·0	...	80	163·6.	
6512 T Herculis	$\frac{6·9}{8·5}$ — $\frac{9·8}{12·7}$	1·4	78	164·8.	

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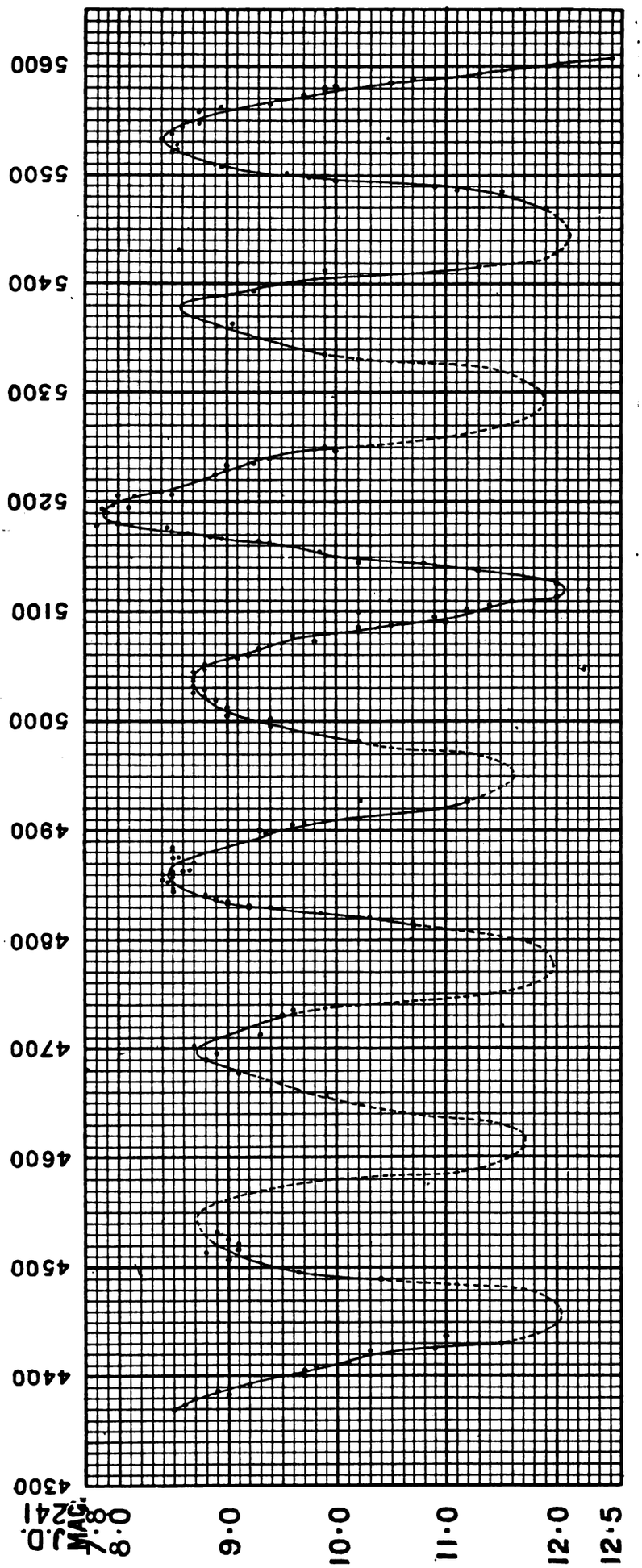

Magnitude Curve of 4057. R S CENTAURI.

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4216. Z HYDRÆ.

Cor. DM.—32,° No. 8314. In no other catalogue.

	R.A.	Dec.
1875.	$11^h\ 41^m\ 22^s$	$-32°\ 34'$.
1900.	**11 42 37**	**−32 43.**

This star is No. 138 of Professor J. C. Kapteyn's list of stars 9·0 or brighter in the first two parts of Thome's Cordoba DM. and missing on the plates, (see C.P.D. Vol. III. p. 76).

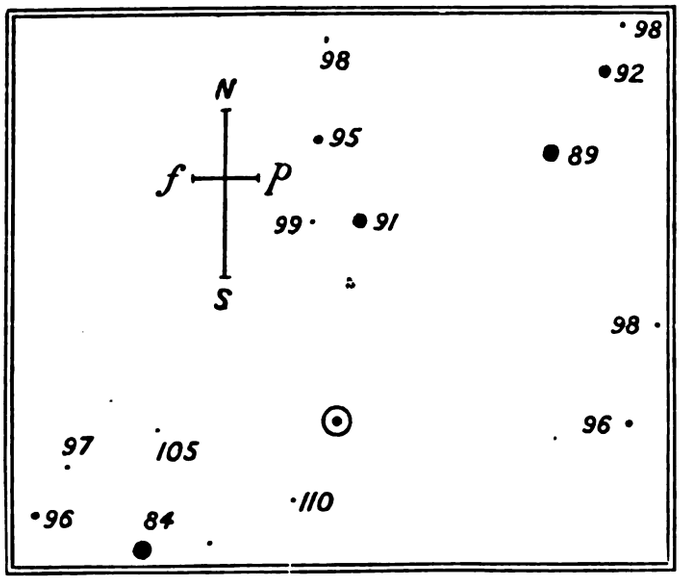
This star is 8·5 mag. in the Cor. DM., it is the only determination published. The observations made here are given below. They shew that the star is variable from

8·75 mag. to 9·75 mag.

with a colour equal to about 5·7 on Dr Chandler's scale, but the variation is very irregular.

A period of about 61 days will suit many of the minima, but it would seem that some minima are altogether omitted. In a general way, this star is usually of about the 9th mag. and the duration of minimum is very short. It reminds one strongly of the variation of Betelgeuse and should provisionally be assigned to that class of variable star. Sometimes, like Betelgeuse, this star is somewhat brighter than its usual magnitude.

The star can be readily identified by the aid of the following map.



NOTE:—The magnitudes have been multiplied by ten.
The cross-bars are:—from N. to S. = 5′ in Dec., from *p.* to *f.* = $10^{s.000}$ in R.A.

References to this star will be found in the *Astr. Journ.* Nos. 442 and 468 of 1898, Aug. 22 and 1899, Aug. 29.

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Observations:—

1897.	Julian Day.	Mag.	Colour.
Apr. 29	2414044	9·1	
May 2	4047	9·1	
June 29	4105	9·4	
Aug. 2	4139	9·25	
1898.			
Feb. 8	4329	9·1	
,, 20	4341	9·5	
Mar. 2	4351	9·2	reddish.
Apr. 3	4383	8·9	
,, 13	4393	9·1	red.
,, 25	4405	9·55	good.
,, 26	4406	9·5	
,, 29	4409	9·5	
May 2	4412	9·4	
,, 18	4428	9·1	
June 1	4442	9·1	
,, 6	4447	9·1	
,, 9	4450	9·15	
,, 25	4466	9·3	
,, 30	4471	9 25	
,, ,,	4471	9·25	
July 8	4479	9·15	
,, 9	4480	9·25	
,, 19	4490	9·1	yellowish.
,, 20	4491	9·1	
,, 24	4495	9·15	
,, 25	4496	9·0	orange.
Aug. 4	4506	8·95	
,, 12	4514	9·15	
,, 15	4517	9·2	
,, 21	4523	9·3	
,, 22	4524	9·45	
,, 24	4526	9·4	
Nov. 30	4624	9·1	
1899.			
Jan. 23	4678	9·1	
Feb. 4	4690	9·0	yellow.
,, 10	4696	8·95	5.
,, 17	4703	9·05	
,, 18	4704	9·2	
,, 20	4706	9·2	4.
,, 25	4711	9·3	
,, 27	4713	9·3	
Mar. 4	4718	9·5	
,, 7	4721	9·5	
,, 13	4727	9·6	

1899.	Julian Day.	Mag.	Colour.
Mar. 17	2414731	9·6	
,, 21	4735	9·5	
Apr. 28	4773	9·15	
May 2	4777	9·6	
,, 10	4785	9·4	
,, 19	4794	9·15	
,, 20	4795	8·95	
,, 27	4802	9·15	
June 3	4809	9·0	
,, 7	4813	9·05	
,, 9	4815	8·9	
,, 10	4816	8·9	
,, 13	4819	9·0	
,, 15	4821	9·05	
,, 18	4824	8·9	
,, 19	4825	8·75	7.
,, 24	4830	9·1	
,, 25	4831	9·1	
,, 26	4832	9·05	
,, 29	4835	9·25	
,, 30	4836	9·25	
July 1	4837	9·4	
,, 2	4838	9·35	
,, 5	4841	9·4	
,, 10	4846	9·45	7.
,, 12	4848	9·45	
,, 17	4853	9·5	
,, 18	4854	9·45	
,, 19	4855	9·3	
,, 22	4858	9·1	
,, 26	4862	9·2	
,, 27	4863	9·05	
,, 28	4864	9·2	
Aug. 4	4871	[9·1]	
,, 10	4877	9·15	
,, 14	4881	8·8	
,, 17	4884	9·05	
Sept. 1	4899	9·15	
,, 2	4900	9·1	
,, 6	4904	9·05	
Dec. 16	5005	9·1	
1900.			
Jan. 1	5021	9·4	
,, 6	5026	9·5	
,, 18	5038	9·3	
,, 23	5043	8·9	6.

1900.	Julian Day.	Mag.	Colour.
Feb. 2	2415053	8·95	
,, 12	5063	8·95	6.
,, 20	5071	9·1	
,, 23	5074	9·0	
,, 26	5077	9·1	
Mar. 6	5085	9·1	
,, 8	5087	9·2	
,, 10	5089	9·3	
,, 16	5095	9·5	
,, 22	5101	9·5	
,, 27	5106	9·6	
,, 30	5109	9·25	
,, 31	5110	9·2	
Apr. 3	5113	9·1	
,, 16	5126	9·05	
,, 18	5128	9·05	
,, 21	5131	9·1	
,, 28	5138	9·2	
May 3	5143	9·15	
,, 5	5145	9·1	
,, 15	5155	9·25	
,, 20	5160	9·15	
,, 21	5161	9·15	
,, 24	5164	9·1	
,, 27	5167	9·1	
,, 31	5171	9·05	
June 2	5173	9·1	
,, 5	5176	9·0	
,, 8	5179	9·05	
,, 23	5194	9·25	
,, 25	5196	9·1	
July 3	5204	9·1	
,, 6	5207	9·0	
,, 24	5225	8·95	
Aug. 1	5233	9·05	
,, 3	5235	9·1	
,, 4	5236	8·9	
,, 7	5239	8·95	
,, 14	5246	9·1	
,, 18	5250	9·15	
,, 20	5252	9·2	
,, 28	5260	9·1	
,, 30	5262	9·25	
1901.			
Feb. 1	5417	8·95	
,, 15	5431	8·95	

1901.	Julian Day.	Mag.	Colour.
Feb. 19	2415435	9·0	
,, 22	5438	9·05	
,, 24	5440	9·1	
,, 27	5443	9·3	
Mar. 1	5445	9·7	good.
,, 4	5448	9·75	very good.
,, 5	5449	9·7	
,, 9	5453	9·7	
,, 13	5457	9·1	
,, 15	5459	9·05	
,, 18	5462	9·0	
,, 22	5466	8·8	
,, 23	5467	8·8	
,, 25	5469	8·8	5.
,, 26	5470	8·9	
,, 27	5471	8·8	
,, 29	5473	8·8	
,, 31	5475	8·85	
Apr. 4	5479	8·8	7.
,, 6	5481	8·8	
,, 8	5483	8·75	4.
,, 11	5486	8·9	
,, 13	5488	9·0	
,, 15	5490	9·0	
,, 21	5496	9·0	
,, 23	5498	9·1	
,, 27	5502	9·05	
May 3	5508	9·4	
,, 22	5527	9·05	
June 2	5538	8·95	
,, 15	5551	8·85	
,, 25	5561	8·9	
,, 29	5565	9·0	
July 8	5574	9·0	
,, 10	5576	9·1	
,, 12	5578	9·1	
,, 14	5580	9·05	
,, 19	5585	9·1	
,, 23	5589	9·05	
,, 27	5593	9·05	
Aug. 9	5606	9·0	
,, 14	5611	9·0	
,, 18	5615	9·05	
,, 24	5621	9·05	
,, 30	5627	9·2	
Sept. 6	5634	[9·15]	

The observed minima are well represented by the formula:—

$$\text{J.D. } 2415025 + 61^d{\cdot}0\ \text{E.} + 10^d \sin(15^\circ \times \text{E.} + 75^\circ).$$

but as before remarked, this formula also gives minima which do not actually occur. A complete exhibit of these computed minima compared with the observations made is given below.

Observation. Mag.	Observation. Date. No.	Calculation. Date.	Epoch No.	O.—C.
9·1	No minimum	Julian Day 2414046	−16	∞
9·4	Julian Day 2414105	4105	−15	od
9·5	4341	4344	−11	− 3
9·55	4405	4405	−10	0
9·3	4466	4467	− 9	− 1
9·45	4524	4530	− 8	− 6
9·5	4727	4717	− 6	+10
9·6	4777	4781	− 5	− 4
9·5	4853	4845	− 4	+ 8

Observation. Mag.	Observation. Date. No.	Calculation. Date.	Epoch No.	O.—C.
Minimum Improbable		Julian Day 2414908	− 3	!
9·5	Julian Day 2415026	5035	0	− 9
9·6	5106	5096	+ 1	+10
9·3	doubtful [5157]	5157	+ 2	!
9·1	No minimum	5217	+ 3	∞
9·75	5448	5452	+ 7	− 4
9·4	5508	5508	+ 8	0
9·0	No minimum	5567	+ 9	∞
9·3	Very uncertain	5628	+10	!

The dates of maximum are very uncertain, the best determined are as follows:—

Mag.	Date.
8·9	Julian Day 2414383
8·95	4506
8·95	4696
8·95	4795
8·75	4825
8·8	4881

Mag.	Date.
8·9	Julian Day 2415043
8·9	5236
8·95	5417
8·8	5466
8·75	5483
8·85	5551

These brought up to a mean date using a period of 61 days and the simple mean taken yield, as an average date of Maximum, Julian Day 2415054.

Colour = 5·7.

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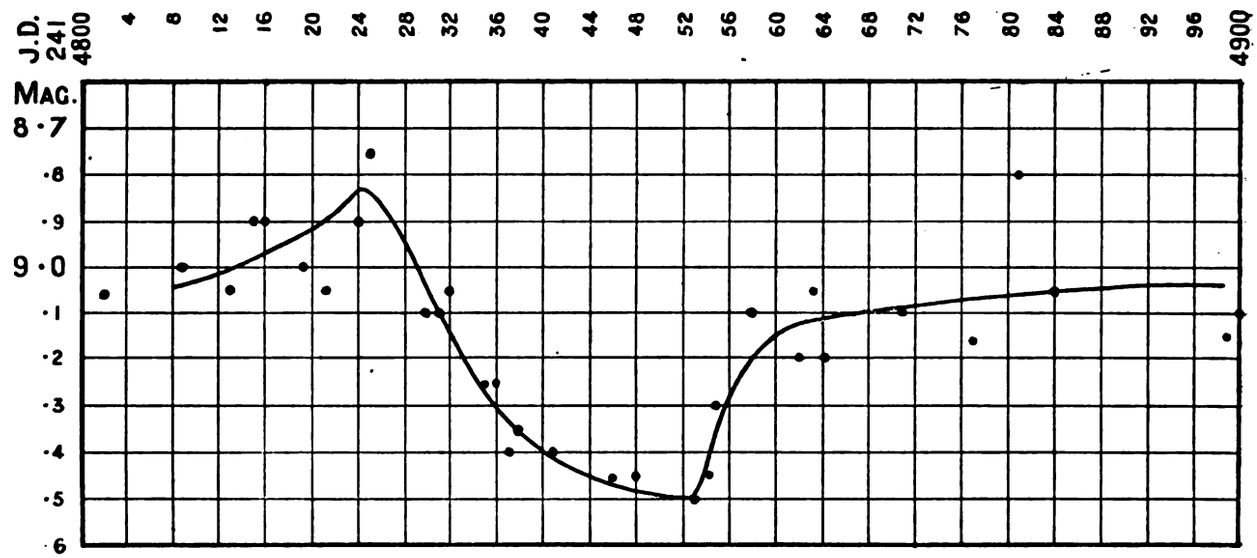
Four diagrams shew the various forms assumed by the magnitude curve of this variable star.

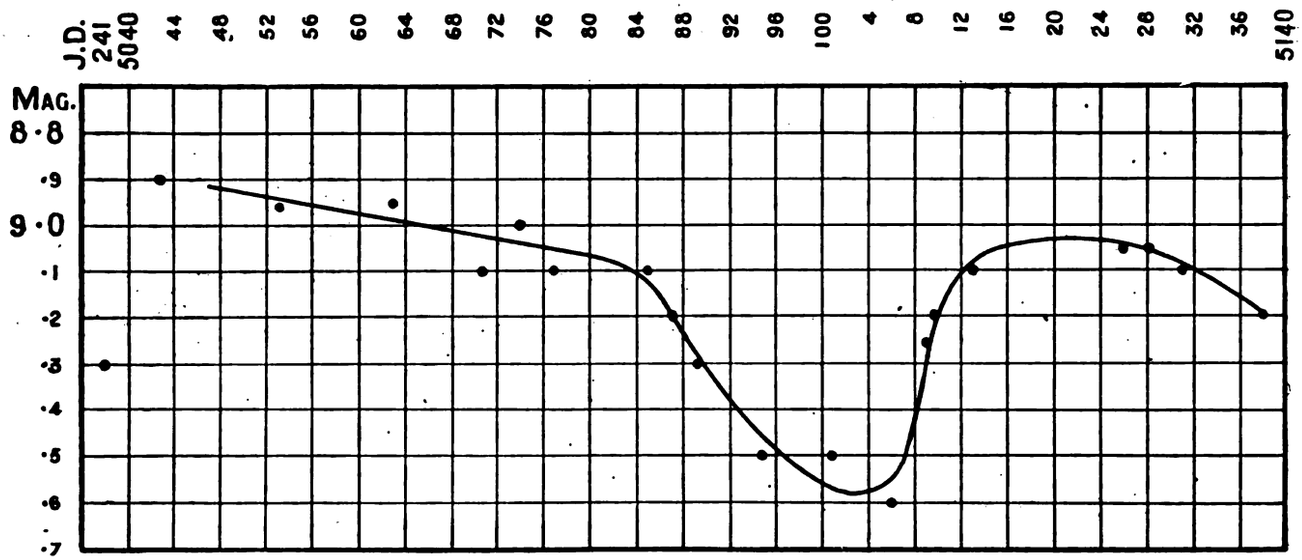
Dr Roberts has investigated this star and finds that a period of 62 days will satisfy his observations made in 1899. (*Astr. Journ.* Nos 491–492 p. 90). His later results, kindly communicated, are :—

Maxima : J.D. 2415046 + 70^{d}·0 E. (Irregular).

MAGNITUDE CURVES OF 4216. Z HYDRÆ.



May–September, 1899.



January–May, 19[illegible]c.

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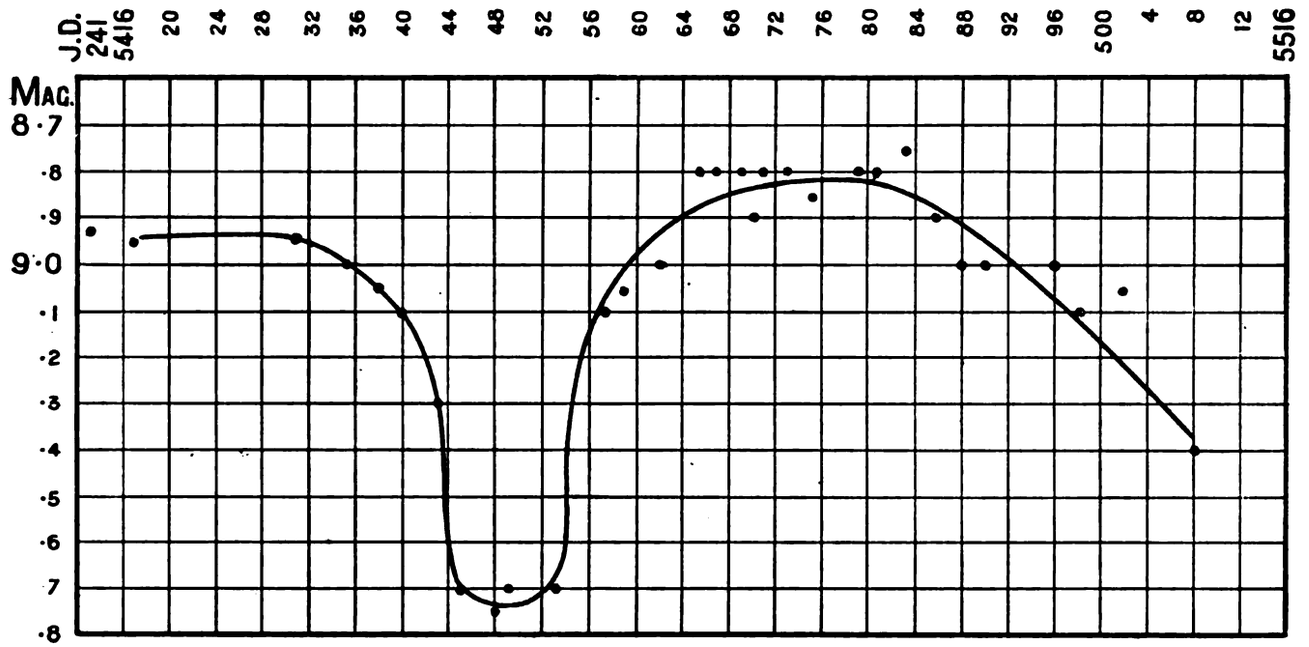
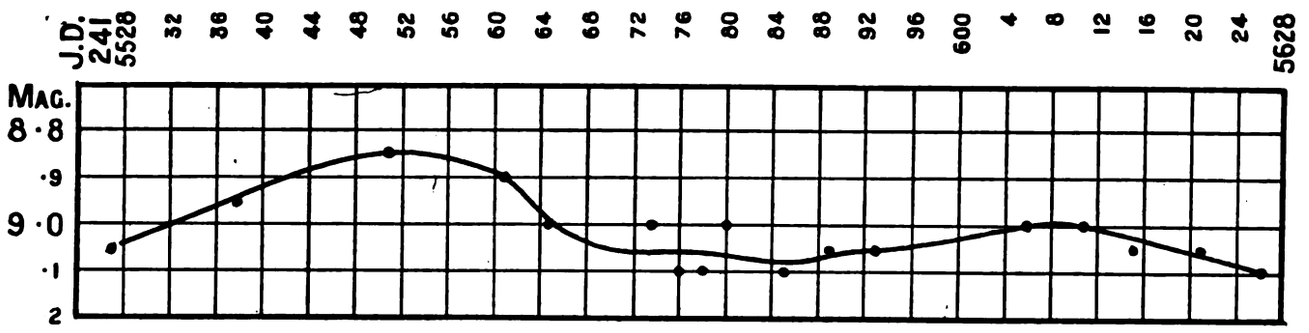


February–May, 1901.



May–September, 1901.

To test the above elements, the following further observations of Z Hydræ were made here in 1902 :—

	Julian Day.	Mag.
1902, Mar. 2	2415811	9·7
,, ,, 4	5813	9·7
,, ,, 7	5816	9·5
,, ,, 14	5823	9·6
,, ,, 15	5824	9·4
,, ,, 17	5826	9·2
,, ,, 20	5829	9·0
,, ,, 24	5833	9·1
,, ,, 30	5839	9·05
,, Apr. 2	5842	9·0
,, ,, 9	5849	8·9
,, ,, 13	5853	8·9
,, ,, 16	5856	9·05
,, ,, 23	5863	9·2
,, ,, 28	5868	9·2

	Julian Day.	Mag.
1902, May 1	2415871	9·25
,, ,, 6	5876	9·2
,, ,, 10	5880	9·4
,, June 6	5907	9·0
,, ,, 23	5924	9·0
,, July 1	5932	9·05
,, ,, 7	5938	9·15
,, ,, 11	5942	9·1
,, ,, 14	5945	9·1
,, ,, 21	5952	9·15
,, ,, 26	5957	9·0
,, Aug. 2	5964	9·1
,, ,, 6	5968	9·05
,, ,, 16	5978	9·1
,, ,, 17	5979	9·1

The formulæ of p. 87B give :—

Minima :—J.D. 2415808. E. = +13. O.—C. = +3d.
5870 14 +8 !
5932 15 ∞

Mean Maxima :—J.D. 2415847
5908
5969

The accordance with observation is fairly satisfactory.

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4225. X CENTAURI.

C.P.D.—41°, No. 5587. Cor. DM.—41°, No. 6787.

	R.A.	Dec.
1875.	$11^h\ 42^m\ 57^s$	—41° 3′·8.
1900.	**11 44 12**	**—41 12 ·1.**

The discovery of the variability of this star was announced by Mrs M. Fleming in the *Astrophysical Journal* for Dec. 1895.

It had been previously found by Miss Reitsma from an examination of the C.P.D. plates at Groningen, but the discovery was not published.

Mrs Fleming found this star during an examination of the Draper Memorial photographs sent from Peru. It has a spectrum of the third type and also bright hydrogen lines. From an examination of 27 plates its range was

7·8 mag. to 12·4 mag.

The individual observations being :—

1889.	Julian Day.	Mag.	1890.	Julian Day.	Mag.	1893.	Julian Day.	Mag.	1894.	Julian Day.	Mag.
May 25	2411148	8·1	May 28	2411516	9·1	May 1	2412585	12·4	June 18	2412998	9·7
June 1	1155	7·8	1892.			,, 5	2589	<10·2	,, 18	2998	9·6
,, 13	1167	8·4	June 23	2273	< 9·6	,, 8	2592	< 9·8	1895.		
1890.			July 2	2282	< 9·6	June 27	2642	11·2	Feb. 20	3245	<10·4
Apr. 1	1459	8·2	,, 3	2283	< 9·6	,, 27	2642	11·2	Apr. 26	3310	< 9·4
May 11	1499	<8·9	1893.			1894.			May 1	3315	9·3
,, 14	1502	8·4	Apr. 28	2582	12·4	Apr. 9	2928	11·6	,, 21	3335	9·2
,, 25	1513	9·2	May 1	2585	<11·9	May 19	2968	11·2	June 4	3349	8·2

Dr Chandler in his Third Catalogue gives :—

Maxima :—1889, May 27 = J.D. 2411150 + 314^d E?

M — m. = 140^d.

Dr Roberts's observations and discussion (*Astr. Journ.*, Nos. 491–2) yield a period of $313^d·9$.

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4260. W CENTAURI.

C.Z. XI. No. 3351. C.P.D.—58°, 3924.

	R.A.	Dec.
1875.	$11^h\ 48^m\ 48^s$	$-58°\ 33'{\cdot}5$.
1900.	**11 50 2**	**−58 41 ·8.**

This star was suspected of variability by Professor J.C. Kapteyn on the following evidence :—

		Julian Day.	Mag.	
Cordoba,	1873, June 13	2405323	9·0	Plate No. 422 examined under the microscope—not the faintest trace although this is a much richer plate than No. 441.
C.P.D. Plate, No. 422,	1886, May 13	10040	inv.	
,, 441,	,, July 5	10093	9·8	

But the first announcement of variability was made by Mrs M. Fleming in the *Astrophysical Journal* for December 1895. Like X Centauri, it was discovered by that lady, whilst examining the Draper Memorial photographs received from Peru, by its spectrum of the third class with bright hydrogen lines. The magnitudes resulting from an examination of no less than 55 different plates are given in the same number of the *Astrophysical Journal.*

On these magnitudes Dr Chandler founds the elements given in his Third Catalogue of Variable Stars, viz. :—

Range of magnitude :—	8·6 to 13·0.
Maxima :—	1889, April 18 J.D.2411111 + 370^d E.

Dr Roberts (*Astr. Journ.*, No. 491-492) gives :—

Range of magnitude :—	8·2 to 12·0 !
Maxima :—	J.D.2415202 + 204^d·3 E.

which are based on his own observations from 1896 to 1899.

4754. U OCTANTIS.

Gilliss P.Z. No. 9192. In no other catalogue.

	R.A.	Dec.
1875.	$13^h\ 9^m\ 32^s$	$-83°\ 34'{\cdot}1$.
1900.	**13 12 20**	**−83 42 ·1.**

In Gilliss's Polar Zones this star was observed twice and the magnitude given as 9·0 (1850·37). As it is missing on the C.P.D. plates, it is No. 669 of the Professor J.C. Kapteyn's list on page 62 of the introduction to the 3rd vol. of the C.P.D. That this star is variable, is pointed out in the *Astr. Journ.*, No. 487 of 1900, Dec. 13.

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The observations made here are as follows :—

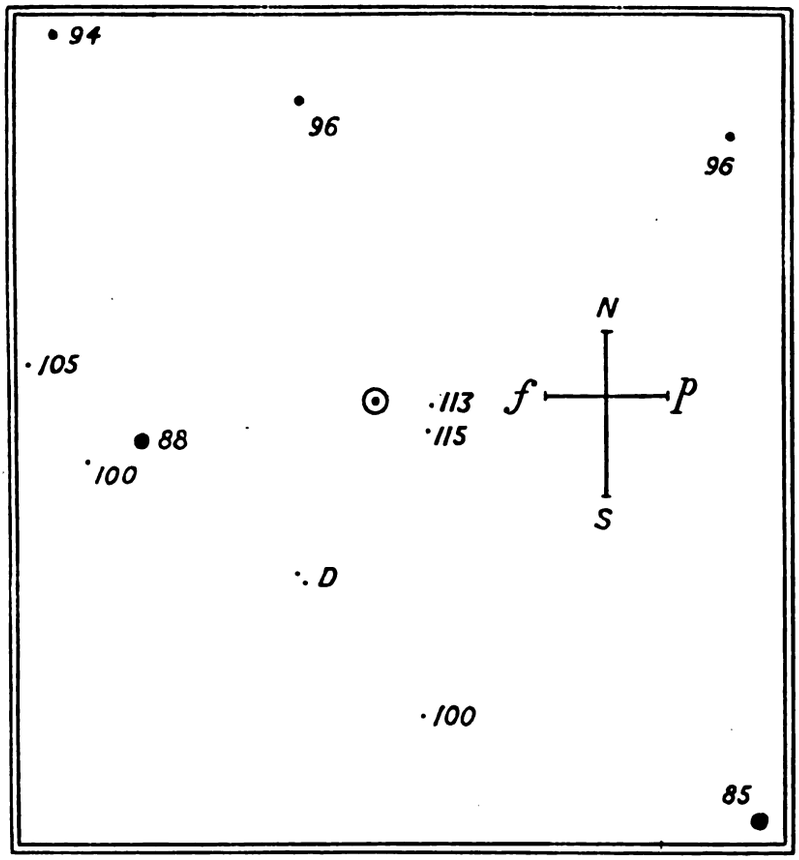
1899.	Julian Day.	Mag.	Colour.
Aug. 4	2414871	10·2	
,, 9	4876	10±	
,, 17	4884	10·3	(red).
Sept. 1	4899	9·9	
,, 19	4917	9·4	
,, 23	4921	9·1	
,, 25	4923	9·0	7.
,, 26	4924	9·1	
Oct. 1	4929	8·8	6.
,, 6	4934	8·7	
,, 10	4938	8·2	6·5.
,, 14	4942	8·2	
,, 18	4946	7·7	
,, 22	4950	7·7	red.
,, 27	4955	7·8	
Nov. 3	4962	8·0	
,, 7	4966	8·0	
,, 10	4969	8·0	
,, 17	4976	8·2	
,, 23	4980	8·3	
,, 27	4984	[8·2]	
Dec. 1	4990	8·3	
,, 7	4996	8·75	
,, 13	5002	8·8	
,, 24	5013	9·0	
1900.			
Jan. 1	5021	9·1	

1900.	Julian Day.	Mag.	Colour.
Jan. 12	2415032	9·6	
Feb. 2	5053	9·8	
,, 14	5065	10·2	
,, 20	5071	10·7	
,, 26	5077	10·8	
Mar. 6	5085	11·2	
,, 16	5095	< 10·8	
,, 23	5102	11·5	
,, 27	5106	11·3	
Apr. 3	5113	12·0	
,, 16	5126	< 12·0	
,, 28	5138	12·0	
May 3	5143	12·0	
,, 20	5160	10·8	
,, 24	5164	10·2	
,, 28	5168	10·1	
June 8	5179	9·65	
,, 20	5191	9·2	
,, 23	5194	9·15	
,, 25	5196	9·15	
July 3	5204	8·9	
,, 6	5207	9·0	
,, 24	5225	8·75	
Aug. 1	5233	8·3	
,, 3	5235	8·2	
,, 7	5239	8·1	
,, 14	5246	8·1	

1900.	Julian Day.	Mag.	Colour.
Aug. 18	2415250	8·0	4.
,, 20	5252	7·9	
,, 28	5260	7·9	3.
,, 30	5262	9·95	5.
Sept. 1	5264	7·9	
,, 7	5270	8·0	
,, 11	5274	8·1	
,, 15	5278	8·7	6.
,, 18	5281	8·2	
,, 23	5286	8·1	7.
Oct. 7	5300	8·3	
,, 15	5308	8·4	
,, 20	5313	8·85	
Nov. 2	5326	9·0	
1901.			
Jan. 8	5393	12·5	
Feb. 1	5417	< 11·4	
,, 19	5435	12·5	
Mar. 18	5462	11·0	
,, 22	5466	10·9	
,, 25	5469	10 4	
,, 31	5475	10·0	
Apr. 4	5479	10·0	
,, 8	5483	9·9	
,, 11	5486	9·9	
,, 13	5488	9·9	
,, 15	5490	9.9	

1901.	Julian Day.	Mag.	Colour.
Apr. 21	2415496	9·85	
,, 23	5498	9·5	
,, 27	5502	9·7	
May 3	5508	9·5	
,, 5	5510	9·4	
,, 15	5520	9·2	
,, 17	5522	9·2	
,, 19	5524	9·0	
,, 22	5527	8·65	
,, 27	5532	8·3	2.
June 2	5538	7·9	
,, 8	5544	8·1	4.
,, 12	5548	7·9	
,, 14	5550	7·9	6.
,, 21	5557	8·2	
,, 25	5561	7·9	6.
,, 29	5565	8·0	
July 8	5574	8·1	
,, 20	5586	8·2	
,, 27	5593	8·3	
Aug. 8	5605	9·1	
,, 10	5607	9·3	6.
,, 17	5614	9·5	
,, 26	5623	9·6	
,, 30	5627	9·75	
Sept. 6	5634	9·8	
,, 14	5642	10·2	

The comparison stars used, will be found on the map.



NOTE.—The magnitudes have been multiplied by ten.
A 7·7^m star, a little way N. *f.*, has been also used for comparison.
The cross-bars are :—N. to S. = 5′ in Dec. *p.* to *f.* = nearly 3^m in R.A.

This star admits of continuous observation at the Cape, as it is so near the South Pole.

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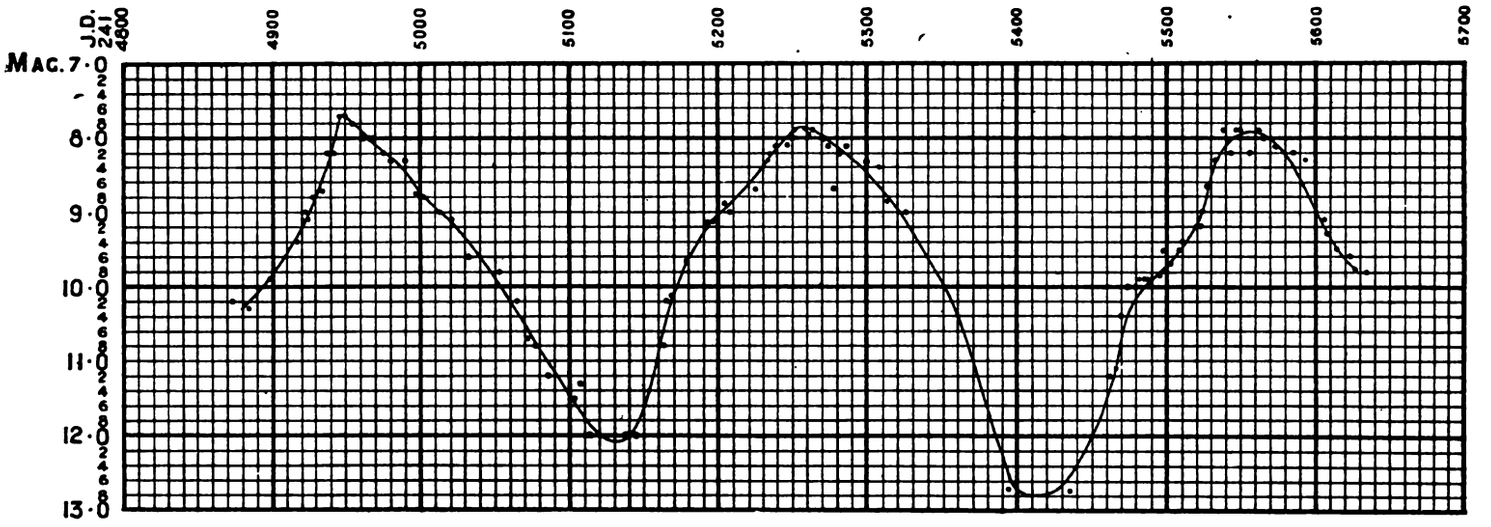
The observations made here are plotted on the diagram.



Magnitude Curve of 4754. U OCTANTIS.

From the diagram we have :—

Range :—7·8m to 12·2m

Maxima, including one of 8·0 mag. on 1902, April 11, are as follows :—

Julian Day.	Interval.
2414946	
	312d
2415258	
	297
2415555	
	296
2415851	

M—m. = 110d

A mean period of 300d·9 will represent Gilliss's observations and those made here within their limits of probable error. Thus we write :—

Maxima = J.D. 2415253 + 300d.9 E.
Colour = 5.

4896. T CENTAURI.

Lac. 5645. Cape 1880, No 7503. C.G.A. 18609.

	R.A.	Dec.
1875.	13h 34m 36s·2	—32° 57′·9.
1900.	**13 36 1·8**	**—33 5·5.**

The determinations of the position of this variable star are as follows :—

	Mag.	Epoch.	R.A. 1875.	Epoch.	Dec. 1875.	No. of Observation. α	No. of Observation. δ
			h m s		° ′ ″		
Lacaille 5645	7·0	1752	13 34 36·2	1752	—32 57 54	1	1
Wash. Zones 1850	8·3	1848	35·69	1848	50·1	3	3
,, Cat. 1860 No. 5738	6·0	1863	36·13	1870	53·6	2	2
,, ,, 1875 ,, 2711	7·5	1872	36·16	1872	51·4	3	3
C.Z. xiii. No. 2083	7·2	1873	36·25	1873	51·0	3	3
C. G. A. No. 18609	6·9	1874	36·26	1874	51·8	4	4
Cape 1880 No. 7503	7·0	1878	36·12	1878	52·1	2	2
C.P.D. —32° No. 3458	7·0	1889	36·1	1889	54	...	...
C.DM. —32° ,, 9549	6·9	1890	36·7	1890	84	...	...

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There is no proper motion.

The variability of this star was announced by Professor J. C. Kapteyn in the *Astr. Nach.* No 2987 of 1890, Aug. 21, on the following evidence.

C.P.D. Plate of 1888, July 18	hour-angle $3^h\ 27^m$ W	Mag.	6·8
20	,, 3 21	,,	8·7
20	,, 3 57	,,	7·0

Dr Chandler in the Third Catalogue of Variable Stars remarks :—

"Disc. by Markwick 1894, and afterwards independently, apparently, at H.C.O. Confirmed also by Roberts. The previous suspicion of the star by Kapteyn loses its weight from the fact that it is based on the large discordance of two plates taken on the same evening, half an hour apart, notwithstanding that the star has a well ascertained period of three mos."

References to this variable star and observations will be found in the following publications.

Markwick, Lt. Col. E.E.	*Journ. Brit. Astr. Association*	vol. v. p. 247.
,, ,,	*Mon. Notices R.A.S.*	,, lvi. p. 35, 1895.
Roberts, A.W.	,, ,, ,,	,, ,, p. 347, 1896.
,, ,,	,, ,, ,,	,, ,, p. 500, ,,
Fleming, Mrs M.	*Astr. Nach.* No. 3269	1894, Dec. 31.
Roberts, A.W.	*Astr. Journ.* No. 349	1895, July 16.
Parkhurst, H.M. and Perry, A.C.	*Astr. Journ.* No. 415	1897, Oct. 15.

Colonel Markwick in the paper in the Mon. Notices, Vol LVI. gives a range of magnitude from 5·0 to 9·5 with a period of $73^d{\cdot}35$.

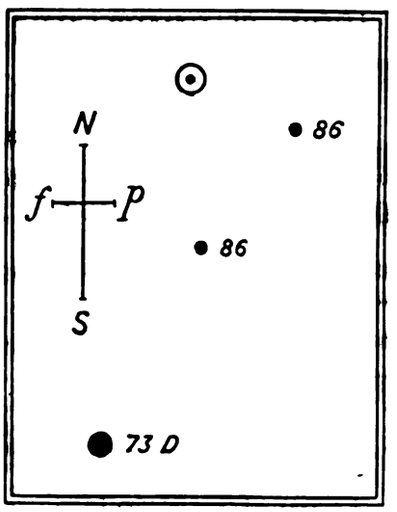
Mrs Fleming finds a photographic range of magnitude from 7·1 to 9·1. When photographed at Arequipa on 1894, May 24, the hydrogen lines Hγ and Hδ were bright and it was suspected of variability for that reason.

Roberts's elements adopted in Chandler's Third Catalogue of Variable Stars are :—

Range $5^m{\cdot}9$ to $9^m{\cdot}2$.
M—m. 42 days.
Maxima :—1895, June 9, Julian Day 2413354 + $91^d{\cdot}2$ E.

On all this Professor Kapteyn remarks, "Can this be an ordinary variable and at the same time an Algol variable?"

To answer this, regular observations were taken at the Cape and particular attention was paid to the colour of the star. The map shews the region :—



NOTE :—The magnitudes of the comparison stars have been multiplied by ten.
N. to S. is 5′ in dec. *p.* to *f.* is $20^{secs.}$ in R.A.
The double star is *h* 4608, 177°, 4½″ mags. 8·0 and 8·2.

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The observations are :—

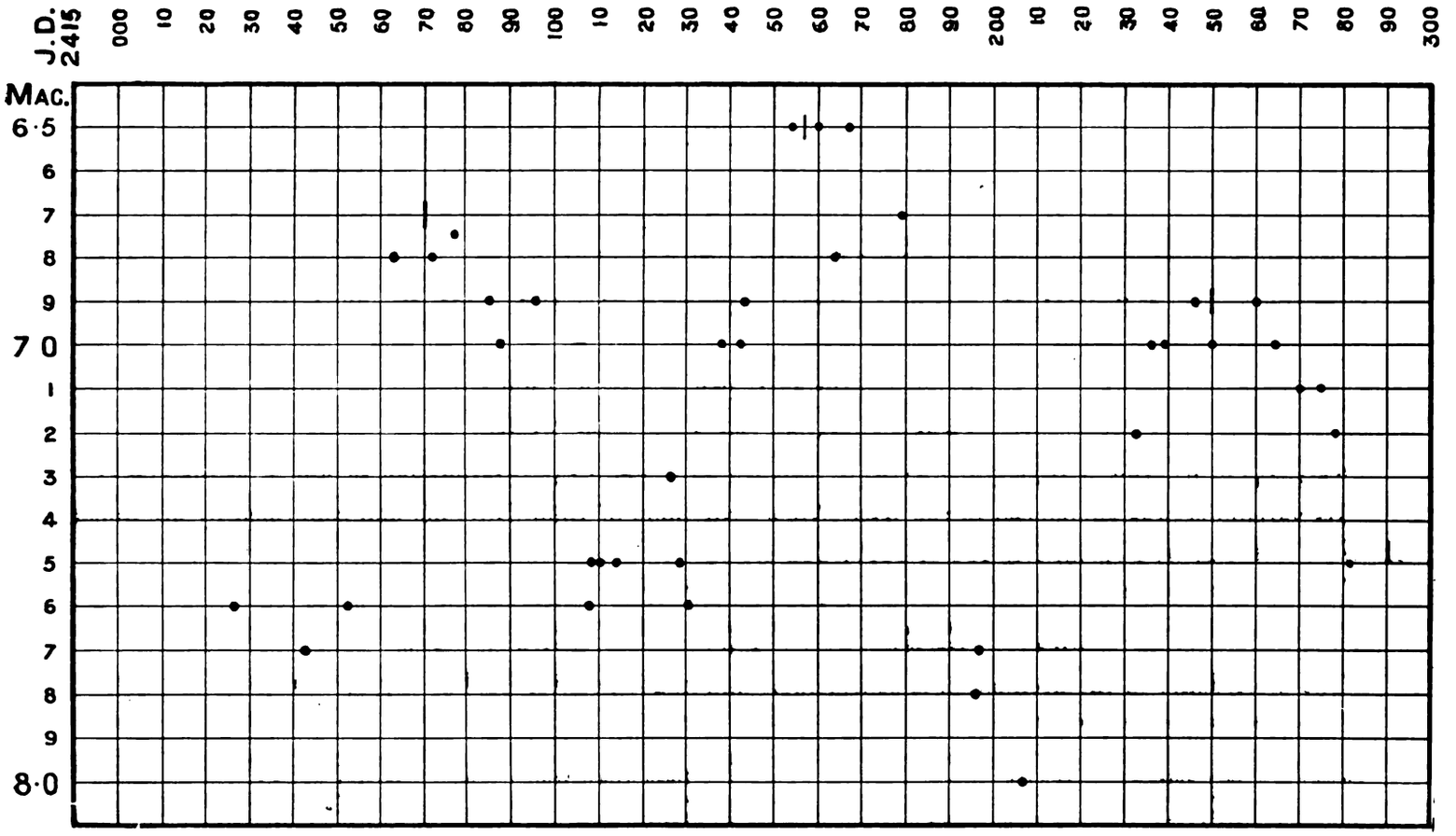
1899.	Julian Day.	Mag.	Colour.
June 13	2414819	7·3	7.
,, 25	4831	7·6	6.
July 5	4841	7·8	4.
,, 26	4862	7·6	
Sept. 16	4914	7·0	6.
,, 19	4917	7·5	7.
,, 24	4922	7·5	6.
,, 25	4923	7·6	6.
,, 26	4924	7·6	
1900.			
Jan. 6	5026	7·6	5.
,, 23	5043	7·7	6.
Feb. 2	5053	7·6	6.
,, 12	5063	6·8	6.

1900.	Julian Day.	Mag.	Colour.
Feb. 21	2415072	6·8	6.
,, 26	5077	6·75	6½.
Mar. 6	5085	6·9	6.
,, 8	5087	7·0	6.
,, 16	5095	6·9	6.
,, 29	5108	7·6	6½.
,, 30	5109	7·5	6½.
Mar. 31	5110	7·5	7.
Apr. 3	5113	7·5	7.
,, 16	5126	7·3	6.
,, 18	5128	7·5	
,, 21	5131	7·6	
,, 28	5138	7·0	6.
May 3	5143	7·0	

1900.	Julian Day.	Mag.	Colour.
May 5	2415145	6·9	
,, 15	5155	6·5	7.
,, 20	5160	6·5	
,, 24	5164	6·8	
,, 27	5167	6·5	6.
June 8	5179	6·7	
,, 25	5196	7·8	
,, 26	5197	7·7	6.
July 6	5207	8·0	
Aug. 1	5233	7·2	5.
,, 4	5236	7·0	
,, 7	5239	7·0	
,, 14	5246	6·9	6.

1900.	Julian Day.	Mag.	Colour.
Aug. 18	2415250	7·0	
,, 28	5260	6·9	6.
Sept. 1	5264	7·0	
,, 7	5270	7·1	6.
,, 11	5274	7·1	6.
,, 15	5278	7·2	
,, 18	5281	7·5	
1901.			
Feb. 1	5417	7·6	
,, 27	5443	6·8	6.
Mar. 5	5449	6·9	5½.
,, 9	5453	6·8	6.
,, 18	5462	7·1	6.

The observations made in 1900 are plotted on the diagram :—



Magnitude-Curve, 1900. 4896. T CENTAURI.

It is remarkable that on no occasion was this variable fainter than 8·0 or brighter than 6·5, a range of only 1½ mags., which is not much different from the range shewn by the Harvard photographic observations. The range given by Markwick is 4½ mags. and by Roberts 3·7 mags.

It is very certain that no observation was secured here when the variable was as faint as the star of 8·6 mag. which is about 5′ south of it.

The colour observations shew perhaps a slight tendency to make the star somewhat less red at mimima.

It is evident that the period given by Dr Roberts (91·2 days) is nearly correct. The Cape observations

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give a mean maximum for 1900, Feb. 17 = J.D. 2415068. The only allowable number of intervals since Roberts's epoch of 1895 is 19 which yields a period of

90·21 days.

Kapteyn's suspicion that the star might be an Algol variable is not yet confirmed and the variation of magnitude shewn on the plates of 1888, 20 July still awaits explanation.

Since the above was written Dr Roberts's new elements have been published (*Astr. Journ.* Nos. 491–492). A comparison is :—

	Mag.	Colour	M—m.	Maxima.
Roberts :—	$\frac{5\cdot3}{6\cdot0}$ to 9·0	...	46d	J.D. 2415078 + 90d·4 E.
Cape :—	$\frac{6\cdot5}{6\cdot9}$ to $\frac{7\cdot7}{8\cdot0}$	6	[27d]	2415068 + 90 ·2 ,,
Compare				
5758 X Herculis	$\frac{5\cdot9}{6\cdot3}$ to $\frac{6\cdot8}{7\cdot2}$	7	60	92d·5

Dr Roberts has recently contributed a paper on T Centauri to the Royal Astronomical Society, containing his latest results.

4935. RT CENTAURI.

C.Z. XIII. No. 2483. C.G.A. 18751. Cor. DM. −36°, No. 8854.

	R.A.	Dec.
1875.	13h 41m 2s·3	−36° 14′·2.
1900.	**13 42 29·7**	**−36 21·8.**

This star is No. 103 of Professor J. C. Kapteyn's list on p. 75 of the Introduction to Vol. I. of the C.P.D.

Its variability was announced in the *Astr. Nach.*, No. 3389 of 1896, Nov. 30, and confirmed by Mr Robert H. West in the *Astr. Journ.*, No. 414 of 1897, Oct. 6.

The meridian observations are as follows (equinox of 1875)—

C.Z.,	1873·51	13h 41m 2s·38	−36° 14′ 10″·8	1 obs.
C.G.A.,	1880·46	2 ·31	15 ·0	2 ,,

The discordance in the declination is considerable and might possibly be due to proper motion.

The observations found are :—

		Julian Day.	Mag.	
Cordoba,	1873, July 7	2405347	9	
	1880, June 28	7895	9	
	1888, Mar.		9·0	
R. H. West,	1897, Mar. 30	14014	9·15	Indicates a Max. of 8·6 for 1897, May 21 J.D. 2414066.
	,, June 25	4101	9·5	
Hugh Wright,	,, Mar. 5	3989	9·2	
A. J. No. 425	,, ,, 6	3990	9·2	
1898, Jan. 22.	,, ,, 7	3991	9·3	
	,, ,, 8	3992	9·2	
	,, 9	3993	9·2	
	,, ,, 29	4013	9·2	
	,, ,, 30	4014	9·2	
	,, ,, 31	4015	9·3	
	,, Apr. 1	4016	9·3	
	,, ,, 2	4017	9·2	
	,, ,, 13	4028	9·2	
	,, ,, 19	4034	9·3	
	,, ,, 26	4041	9·0	
	,, ,, 27	4042	9·0	

		Julian Day.	Mag.
Hugh Wright,	1897, Apr. 30	2414045	9·1
A. J. No. 425	,, May 1	4046	9·1
1898, Jan. 22.	,, ,, 2	4047	9·1
	,, ,, 3	4048	9·1
	,, ,, 4	4049	9·1
	,, ,, 5	4050	9·0
	,, ,, 6	4051	9·1
	,, ,, 7	4052	9·0
	,, ,, 8	4053	8·9
	,, ,, 9	4054	9·0
	,, ,, 10	4055	9·0
	,, ,, 11	4056	9·0
	,, ,, 23	4068	8·9
	,, ,, 26	4071	9·0
	,, June 2	4078	9·0
	,, ,, 29	4105	9·4
	,, July 2	4108	9·3
	,, ,, 5	4111	9·5
	,, Aug. 25	4162	10·5
	,, ,, 28	4165	inv.

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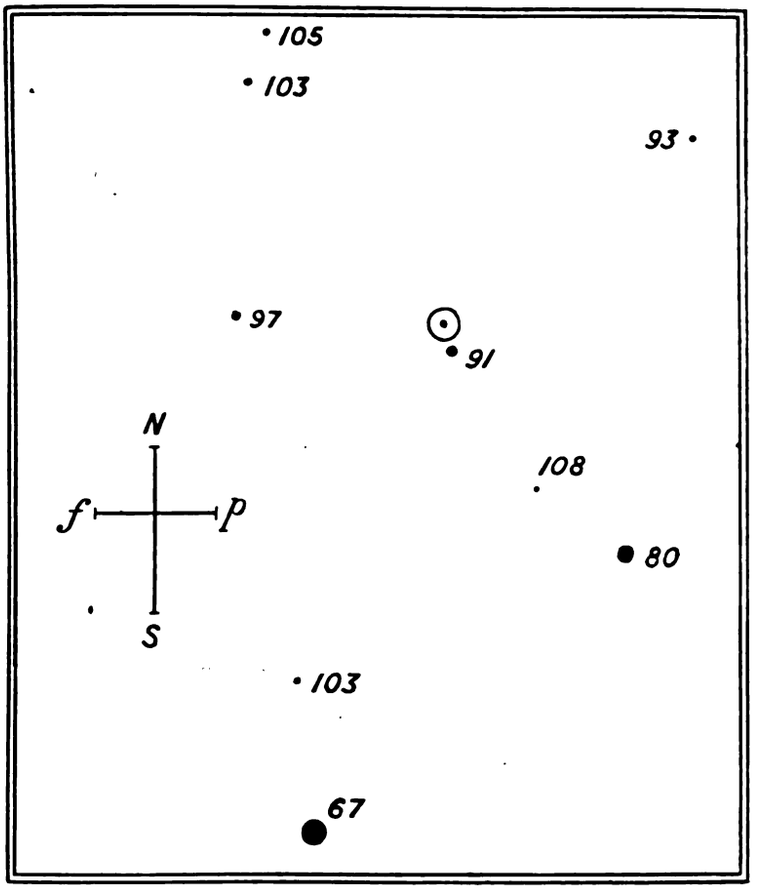
The star is conveniently situated a little N. *f.* a star of the 9·1 magnitude, see map.



NOTE.—The magnitudes on the map have been multiplied by ten.
The cross-bars are :—from N. to S. = 5′ and from *p.* to *f.* = 20^{secs}.

The Cape observations are :—

1896.	Julian Day.	Mag.	Colour.
Apr. 20	2413670	10·5	
,, 22	3672	10·5	
June 4	3715	9·6	
,, 16	3727	9·4	
,, 30	3741	9·2	orange.
July 4	3745	9·2	,,
,, 5	3746	9·1	
,, 23	3764	9·0	
,, 31	3772	8·9	
Aug. 4	3776	8·6	orange.
,, 8	3780	8·6	
,, 15	3787	8·3	red.
,, 23	3795	8·5	,,
,, 25	3797	8·1	orange.
,, 28	3800	[8·6]	
,, 29	3801	8·4	red.
Sept. 2	3805	8·5	
,, 8	3811	8·0	
,, 11	3814	8·4	
,, 15	3818	8·4	very red.
,, 19	3822	8·6	
,, 22	3825	8·8	
1897.			
Mar. 25	4009	9·4	red.
Apr. 2	4017	9·5	red.
,, 8	4023	9·3	(F) red.
,, 26	4041	9·0	7.
,, 28	4043	8·9	7·5.
May 2	4047	8·9	red.
,, 12	4057	9·0	,,
,, 21	4066	9·1	7.
,, 30	4075	9·2	
June 8	4084	9·4	9.

1897.	Julian Day.	Mag.	Colour.
Aug. 2	2414139	9·9	
,, 5	4142	9·8	
,, 12	4149	10·0	
,, 20	4157	11·0	
,, 25	4162	11·5	
,, 28	4165	inv.	
Sept. 3	4171	,,	
,, 17	4185	,,	
1898.			
Mar. 11	4360	9·4	
Apr. 4	4384	9·8	
,, 13	4393	9·7	
,, 15	4395	9·9	
,, 20	4400	10·0	
,, 26	4406	10·0	
,, 29	4409	10·0	
May 7	4417	10·3	
,, 15	4425	10·5	
,, 19	4429	10·8	
,, 21	4431	11·5	
,, 27	4437	11·0	
June 1	4442	10·5	
,, 8	4449	10·4	
,, 10	4451	10·3	
,, 14	4455	10·2	
,, 18	4459	10·2	
,, 25	4466	10·0	
,, 30	4471	9·7	
July 8	4479	9·6	
,, 20	4491	9·25	
,, 25	4496	9·15	
Aug. 4	4506	9·0	red.
,, 12	4514	8·8	

1898.	Julian Day.	Mag.	Colour.
Aug. 15	2414517	9·0	
,, 22	4524	8·6	
,, 25	4527	8·6	red.
,, 31	4533	8·5	
Sept. 6	4539	[8·4]	
,, 13	4546	7·9	7.
,, 19	4552	8·2	
,, 24	4557	8·2	
,, 30	4563	8·5	
Oct. 7	4570	8·6	
1899.			
Feb. 2	4688	10·7	
,, 4	4690	10·4	
,, 18	4704	10·5	
Mar. 9	4723	9·8	
,, 17	4731	9·9	
,, 21	4735	9·7	
Apr. 23	4768	8·7	
,, 28	4773	8·4	
May 2	4777	8·7	
,, 10	4785	8·4	
,, 14	4789	8·2	
,, 19	4794	8·3	
,, 20	4795	8·4	6.
,, 21	4796	8·4	
,, 25	4800	8·25	
June 3	4809	8·4	
,, 7	4813	8·6	
,, 9	4815	8·6	
,, 18	4824	8·8	
,, 25	4831	9·1	
,, 26	4832	9·0	7·5.
July 5	4841	9·4	

1899.	Julian Day.	Mag.
July 10	2414846	9·6
,, 18	4854	9·45
,, 28	4864	9·5
Aug. 4	4871	9·6
,, 7	4874	9·5
,, 9	4876	9·7
,, 14	4881	9·7
Sept. 1	4899	10·5
,, 6	4904	10·4
,, 9	4907	10·5
,, 19	4917	< 9·5
,, 24	4922	< 10·5
Dec. 16	5005	9·2
1900.		
Jan. 6	5026	8·7
,, 18	5038	8·7
,, 23	5043	8·3
Feb. 2	5053	8·4
,, 12	5063	8·1
,, 21	5072	8·4
,, 27	5078	8·4
Mar. 6	5085	8·9
,, 16	5095	9·3
,, 31	5110	9·5
Apr. 16	5126	9·6
,, 28	5138	9·6
May 3	5143	9·9
,, 15	5155	9·8
,, 20	5160	10·0
,, 27	5167	10·8
June 8	5179	10·4
,, 26	5197	10·8

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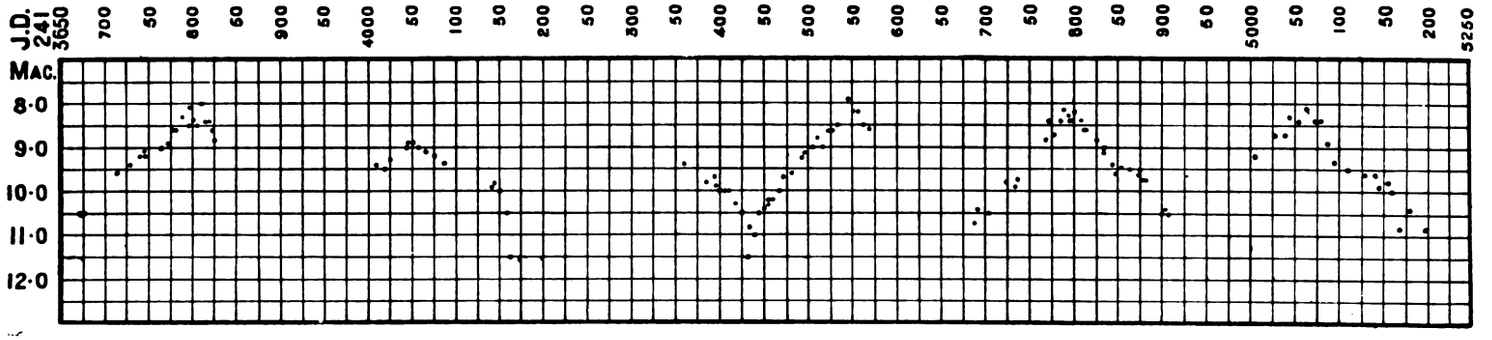
Some of the above observations and a period deduced from them will be found in the *Astr. Journ.*, Nos. 442 and 468. (1898, Aug. 22 and 1899, Aug. 29.)

The observations are plotted on the following diagram :—



Magnitude Curve of 4935. RT CENTAURI.

The plotted magnitudes suggest the following elements: —

Maxima = 1898, Sept. 13 = J.D. 2414546 + 250^{d} E.

Range :— $\frac{7{\cdot}9^{m}}{8{\cdot}9}$ to $\frac{10{\cdot}8^{m}}{<11{\cdot}5}$

M—m. = 120 days.

Halt lasting from the 50th to the 80th day after maximum.

An attempt to include the observations of 1873 and 1880 on the supposition (which is manifestly a very rough one) that they are maxima, gives a period of 248^{d}.

The following is a comparison between observation and maxima computed from

J.D. 2414546 + 248^{d}·∂ E.

viz. :—

Observation. Julian Day.	Computation. Julian Day.	O.—C. d	Observation. Julian Day.	Computation. Julian Day.	O.—C. d
2415057 ± 5^{d}	2415042	+15	2413805 ± 5^{d}	2413802	+ 3
14795 ± 5	14794	+ 1	07895 ± 60	07850	+45
14545 ± 5	14546	− 1	05347 ± 60	05370	−33
14045 ± 5	14050	− 5			

The colour value is :—

m		m	Colour.
7·9	to	8·9	8·9
9·0	to	9·4	7·6

but these numbers rest on the very insecure foundation of 7 observations.

The faint maximum of 1897 will be remarked.

The following is a comparison with Dr Roberts's elements (A. J. Nos. 491–2).

	Mag.			M–m.	Maxima.
Roberts :—	8·8	to	11·3	120^{d}	J.D. 2415048 + 249·2^{d} E.
Cape :—	$\frac{7{\cdot}9}{8{\cdot}9}$	to	$\frac{10{\cdot}8}{<11{\cdot}5}$	120	2415046 + 248·0 E.

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4953. RX CENTAURI.

C.P.D.—36°, No. 6158. In no other catalogue.

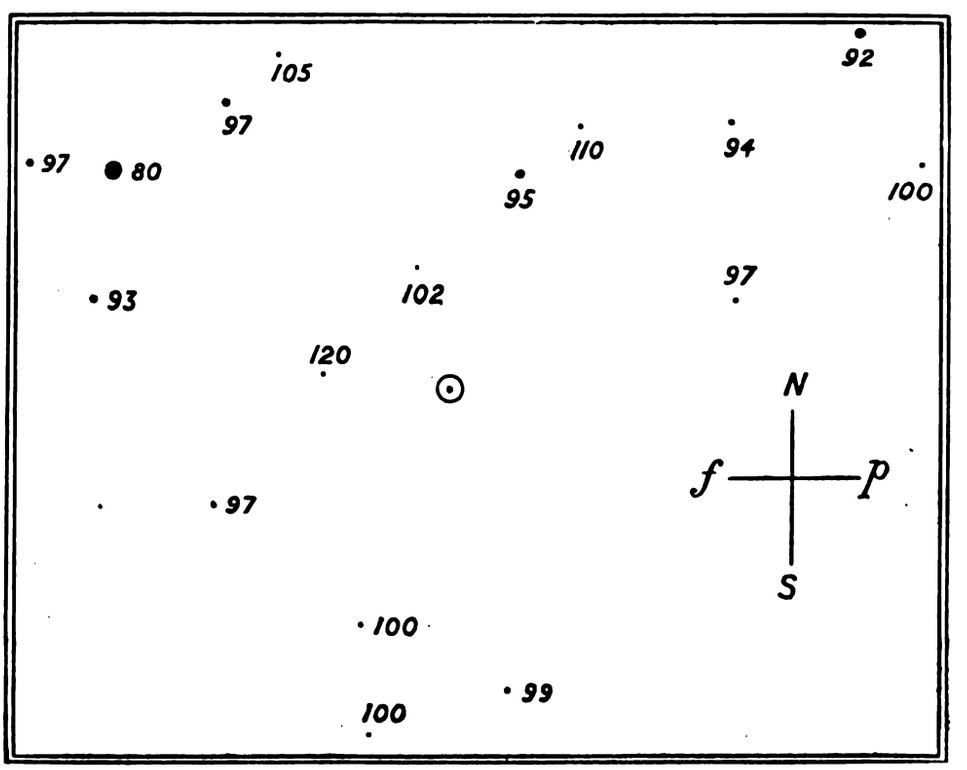
	R.A.	Dec.
1875.	$13^h\ 44^m\ 5^s$	—36° 19′·3.
1900.	**13 45 32**	**—36 26 ·8.**

This star occurs in Professor J. C. Kapteyn's List of Suspected Variables as follows :—

"On Plate No. 1524,	1888, Aug. 4	Mag. <9·6.
,, 1554,	,, ,, 16	,, <9·6.
,, 2784,	1890, July 25	,, 10·25.
,, 2808,	,, Aug. 14	,, 9·5.
,, 2817,	,, ,, 19	,, 9·45.

No defect could be seen under the microscope in the film or image of plate No. 2784. *Not in Thome's DM.* Variability highly probable."

The Cape observations soon put the question of variability beyond doubt. The region about this star is given on the map.



NOTE.—The magnitudes on the map have been multiplied by ten.
The cross-bars are :—From N. to S. = 5′ in Dec., *p.* to *f.* = $24^{secs.}$ in R.A.

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All the observations made here (adding the above determinations by Kapteyn) are as follows:—

1888.	Julian Day.	Mag.
Aug. 4	2410854	< 9·6
,, 16	0866	< 9·6
1890.		
July 25	1574	10·25
Aug. 14	1594	9·5
,, 19	1599	9·45
1899.		
June 9	4815	<11·0
,, 25	4831	<10·0
July 5	4841	<11·0
,, 26	4862	10·5
Sept. 2	4900	8·9
,, 6	4904	8·9
,, 9	4907	8·6
,, 12	4910	8·8
,, 16	4914	8·9
,, 19	4917	8·95
,, 24	4922	9·2
,, 26	4924	9·3
Oct. 6	4934	[9·5]

1899.	Julian Day.	Mag.
Dec. 16	2415005	<10·5
1900.		
Jan. 6	5026	<10·5
,, 23	5043	<10·3
Feb. 2	5053	<11·0
,, 12	5063	<10·3
,, 21	5072	<10·5
,, 27	5078	<11·5
Mar. 6	5085	<11·0
,, 31	5110	<10·8
Apr. 16	5126	<11·5
,, 28	5138	<11·5
May 3	5143	<11·5
,, 15	5155	<10·3
,, 20	5160	<11·5
,, 27	5167	<10·5
June 8	5179	10·4
,, 20	5191	9·6
,, 24	5195	9·5
,, 25	5196	9·45

1900.	Julian Day.	Mag.	Colour.
June 26	2415197	9·3	
July 6	5207	9·0	
Aug. 1	5233	9·0	
,, 4	5236	8·95	
,, 7	5239	9·0	4.
,, 14	5246	9·2	
,, 18	5250	9·1	
,, 24	5256	9·3	
Sept. 1	5264	9·5	
,, 7	5270	9·3	
,, 11	5274	9·5	
,, 15	5278	9·65	
,, 18	5281	9·65	
1901.			
Feb. 1	5417	<10·3	
,, 25	5441	<10·5	
Mar. 5	5449	<10·3	
,, 10	5454	<11·3	
,, 17	5461	<11·0	
,, 22	5466	<12·0	

1901.	Julian Day.	Mag.	Colour.
Mar. 25	2415469	<12·5	
,, 31	5475	<10·5	
Apr. 7	5482	<12·0	
,, 8	5483	<12·3	
,, 13	5488	<12·5	
,, 21	5496	<12·5	
May 5	5510	11·0	
,, 15	5520	9·7	
,, 17	5522	9·5	
,, 19	5524	9·4	[red].
,, 22	5527	9·35	
,, 27	5532	9·3	
June 8	5544	9·0	[red].
,, 14	5550	9·0	
July 19	5585	9·35	
Aug. 9	5606	9·7	
,, 13	5610	9·85	
,, 18	5615	10·0	
,, 24	5621	10·4	
,, 26	5623	10·2	

The star is invisible in the 7-in. for such a large part of its period that a diagram of the observed magnitudes is not required.

Maxima are indicated on the following dates.

Mag.	Julian Day.	Interval.
9·4 P	2411600	
8·6 V	4907	3307d.
9·0 ,,	5225	318.
9·0 ,,	5544	319.

These indicate the following provisional elements:—

Maxima = J.D. 2415225 + 329d E.

Range:— $\frac{8\cdot6^m}{9\cdot0}$ to $<12\cdot5^m$.

Colour:— 4·0.

The zone in which this star is situated was observed at Washington on 25th May, 1846, but this star does not occur in it.

4957. T APODIS.

Gilliss's Polar Zones, No. 9628.
(In no other catalogue.)

	R.A.	Dec.
1875.	$13^h\ 43^m\ 41^s$	$-77°\ 11'\cdot0$.
1900.	**13 46 3**	**−77 18·5.**

This star is No. 689 of Professor J. C. Kapteyn's list of stars contained in Catalogues of Precision, but missing on the C.P.D. plates (C.P.D. Vol. III. p. 63). The star was also looked for here in August 1899, but not seen. The Washington Observatory was then asked if there were any errors in the reduction of Gilliss's observation and the reply kindly forwarded was that the record was straight. Thereupon further observations were undertaken, and the star found to be variable.

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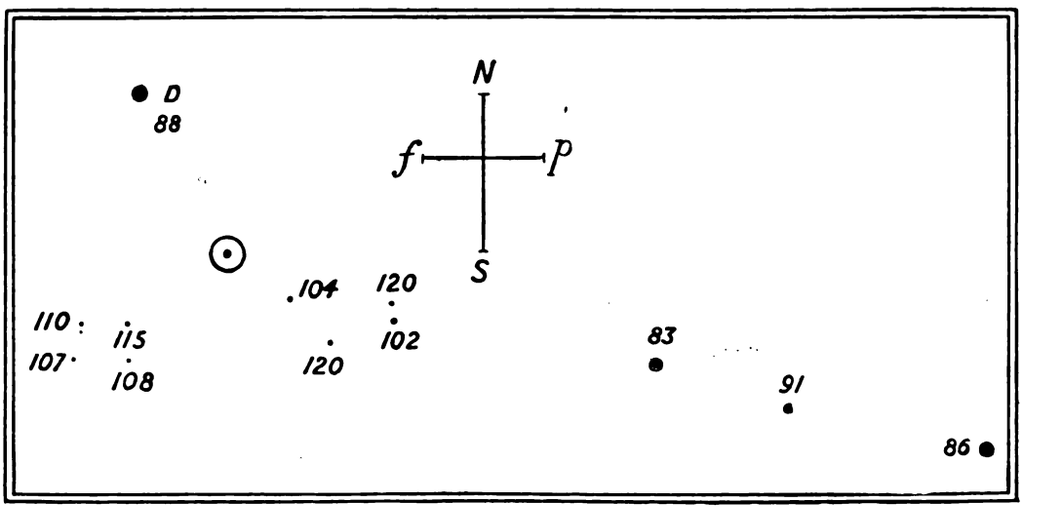
The map will aid in its identification.



NOTE.—The magnitudes on the map have been multiplied by ten.
The cross-bars are :—From N. to S. = 5′ in Dec. ; *p.* to *f.* = 40$^{secs.}$ in R.A.

The observations are :—

			Julian Day.	Mag.
Gilliss, Santiago	1851·25		239721–	9·5
C.P.D. Plate	1885,	May 12	2409674	nil.
,,	,,	June 1	9694	,,
,,	,,	,, 19	9712	,,
,,	,,	,, 27	9720	,,

and

1899.	Julian Day.	Mag. no star
Aug. 4	2414871	
1900.		
July 24	5225	9·0
,, 25	5226	9·0
Aug. 1	5233	8·8
,, 4	5236	8·65
,, 7	5239	8·6
,, 14	5246	8·65
,, 18	5250	8·6
,, 24	5256	8·95
,, 30	5262	8·9
Sept. 1	5264	8·9
,, 7	5270	8·9
,, 11	5274	9·0
,, 15	5278	9·0
,, 18	5281	9·1
,, 23	5286	9·1
Oct. 7	5300	9·7
,, 15	5308	9·9

1901.	Julian Day.	Mag.
Jan. 28	2415413	<10·3
Feb. 1	5417	<10·5
,, 15	5431	<11·5
,, 24	5440	<11·0
Mar. 10	5454	<10·0
,, 18	5462	<11·0
,, 22	5466	<12·0
,, 25	5469	11·0
,, 29	5473	11·0
Apr. 4	5479	9·95
,, 7	5482	9·6
,, 8	5483	9·4
,, 11	5486	9·35
,, 13	5488	9·35
,, 15	5490	9·2
,, 21	5496	9·0
,, 23	5498	9·05
,, 27	5502	9·05
May 3	5508	9·15

1901.	Julian Day.	Mag.
May 5	2415510	8·8
,, 15	5520	9·0
,, 17	5522	9·0
,, 19	5524	9·0
,, 22	5527	9·2
,, 27	5532	9·3
June 2	5538	9·0
,, 8	5544	9·3
,, 12	5548	9·4
,, 14	5550	9·5
,, 21	5557	9·5
,, 25	5561	9·6
July 8	5574	10·0
,, 20	5586	10·8
,, 27	5593	11·0
Aug. 8	5605	<11·5
,, 18	5615	<12·0
,, 30	5627	<11·0
Sept. 14	5642	<11·5

1901.	Julian Day.	Mag.	Colour.
Sept. 21	2415649	<11·0	
Oct. 2	5660	<11·5	
,, 12	5670	<11·5	
,, 30	5688	<11·0	
Nov. 12	5701	<10·7	
Dec. 18	5737	10·5	
1902.			
Feb. 15	5796	8·0	5.
,, 17	5798	8·6	
,, 21	5802	8·5	
,, 25	5806	8·5	
Mar. 2	5811	8·6	
,, 7	5816	8·8	
,, 14	5823	9·0	
,, 17	5826	9·4	
,, 20	5829	9·5	
,, 30	5839	9·9	
Apr. 2	5842	10·2	
,, 9	5849	11·0	

The observations have not yet been continued sufficiently long to allow other than a first approximation to the period, in the meantime we put

$$\text{Maxima} = \text{J.D. } 2415237 + 269^{d}\ E.$$

The magnitudes at different maxima vary greatly, viz. :—

Year.	Mag.
1900	8·6
1901	8·9
1902	8·1

This star is invisible in the 7-in. at minimum.

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5075. RU HYDRÆ.

O.A. 13441. C.G.A. 19229. Cor. DM.—28°, No. 10490.

	R.A.	Dec.
1875.	$14^h\ 4^m\ 22^s{\cdot}1$	$-28°\ 17''6$.
1900.	**14 5 48·3**	**−28 24 8.**

The observations of position of this star are :—

O.A.	13441	1851·4	$14^h\ 4^m\ 22^s{\cdot}68$	$-28°\ 17'\ 38''{\cdot}8$	1 obs.
C.G.A.	19229	1879·5	22 ·08	38 ·0	3 ,,
C.DM.	−28°10490	1886·4	21 ·5	30	

This star is No. 104 of Professor Kapteyn's list of stars contained in Catalogues of Precision but missing on the plates [C.P.D. Vol. I. p. (75)] and as remarked there, it also occurs in the List of Suspected Variable Stars in the *Cordoba Durchmusterung*, Vol. I. p. xliii.

That the star is variable is proved in the *Astr. Journ.* No. 442 of 1898, Aug. 22. Further observations are given in the same Journal Nos. 468 and 487 (1899, Aug. 29 and 1900, Dec. 27).

The observations made previously to the Cape series are :—

Washington Zones. No record in 4 sweeps 1846–1849.

		Julian Day.	Mag.
Argelander,	1851, May 20	2397263	8·0
Cordoba,	1879, June 28	2407529	
,,	,, ,, 29	7530	8·75
,,	,, ,, 30	7531	

		Julian Day.	Mag.
Cordoba,	1886, May 6	2410033	9·5
C.P.D. Plate,	1888, July 16	10835	nil
,,	,, ,, 18	10837	,,
Cordoba,	1891, Sept. 20	11996	10·0

The Cape observations are :—

1896.	Julian Day.	Mag.
Apr. 20	2413670	12±
,, 22	3672	12·5
June 4	3715	12±
,, 20	3731	<10·0
,, 30	3741	12·5
July 23	3764	inv.
,, 31	3772	,,
Aug. 4	3776	,,
,, 8	2780	13·0
,, 15	3787	inv.
,, 23	3795	,,
Sept. 15	3808	11·0
,, 19	3812	10·0
,, 22	3815	9·9
Oct. 1	3834	[9·0]
1897.		
Mar. 25	4009	11·5
Apr. 2	4017	12·0
,, 8	4023	12·0
,, 26	4041	<12·0
May 21	4066	inv.
,, 31	4076	<12·0
June 8	4084	inv.
Aug. 2	4139	,,
,, 12	4149	,,
,, 20	4157	11·0
,, 25	4162	11·0
,, 28	4165	10·3
Sept. 2	4170	10·0
,, 17	4185	9·3
,, 24	4192	8·8
1898.		
Mar. 11	4360	inv.
Apr. 3	4383	,,
,, 13	4393	<12·0
,, 15	4395	<12·0
,, 20	4400	<12·0
,, 26	4406	inv.
,, 29	4409	,,

1898.	Julian Date.	Mag.
May 7	2414417	inv.
,, 15	4425	12·0
,, 18	4428	12·0
,, 19	4429	12·0
,, 21	4431	Seen
,, 27	4437	12·0
June 1	4442	[11·5]
,, 8	4449	inv.
,, 10	4451	,,
,, 14	4455	,,
,, 18	4459	,,
July 8	4479	<12·0
,, 25	4496	[11·5] D
Aug. 4	4506	9·9
,, 6	4508	10·4
,, 12	4514	9·5
,, 15	4517	9·4
,, 19	4521	9·4
,, 22	4524	9·0
,, 25	4527	9·0
,, 31	4533	9·0
Sept. 6	4539	8·8
,, 13	4546	9·0
,, 19	4552	9·0
,, 24	4557	8·9
,, 30	4563	[8·9]
Oct. 7	4570	8·8
1899.		
Feb. 2	4688	11·0
,, 4	4690	11·5
,, 18	4704	11·0
Mar. 9	4723	inv.
,, 17	4731	,,
Apr. 23	4568	,,
May 20	4795	,,
June 7	4813	12·0
,, 9	4815	12±
,, 18	4824	11·5 D

1899.	Julian Day.	Mag.	Colour.
June 25	2414831	11·0±	
July 5	4841	9·7	
,, 10	4846	9·75	
,, 18	4854	9·2	
,, 28	4864	8·6	
,, 30	4866	8·8	
Aug. 4	4871	8·75	
,, 7	4874	8·5	
,, 9	4876	8·2	
,, 14	4881	8·5	6·5.
,, 16	4883	8·7	
Sept. 1	4899	8·7	
,, 2	4900	8·7	
,, 6	4904	8·7	
,, 9	4907	8·5	4.
,, 12	4910	8·6	4.
,, 16	4914	8·8	
,, 19	4917	8·7	
,, 24	4922	8·8	9.
,, 26	4924	8·8	
,, 27	4925	8·7	
Oct. 6	4934	[9·1]	
Dec. 16	5005	10·5	
1900.			
Jan. 6	5026	<10·4	
,, 23	5043	<11·0	
Feb. 2	5053	<10·5	
,, 12	5063	<11	
Mar. 23	5102	<12·0	
,, 29	5108	<12·0	
Apr. 16	5126	<10·7	
,, 28	5138	10·8	
May 3	5143	10·7	
,, 5	5145	11·1	
,, 15	5155	10·2	
,, 20	5160	10·25	
,, 27	5167	9·9	
June 8	5179	8·8	

1900.	Julian Day.	Mag.	Colour.
June 20	2415191	8·3	
,, 24	5195	7·8	
,, 26	5197	7·7	3.
July 6	5207	7·5	3.
Aug. 1	5233	7·8	
,, 4	5236	7·8	
,, 14	5246	7·9	
,, 18	5250	8·3	
,, 28	5260	8·2	
Sept. 1	5264	8·5	6.
,, 3	5266	8·6	
,, 11	5274	8·6	
,, 15	5278	8·8	
1901.			
Feb. 26	5442	<11·2	
Mar. 9	5453	<11·0	
,, 17	5461	<11·6	
,, 22	5466	<11·5	
,, 25	5469	<12·5	
,, 31	5475	<11·0	
Apr. 8	5483	<12·0	
,, 13	5488	<12·5	
,, 21	5496	<12·5	
May 5	5510	11·0	
,, 15	5520	9·6	
,, 17	5522	9·6	
,, 19	5524	9·1	
,, 22	5527	8·9	
,, 27	5532	8·85	
June 8	5544	8·85	
,, 14	5550	8·95	
July 19	5585	8·8	
Aug. 8	5605	9·1	
,, 10	5607	9·2	
,, 13	5610	9·2	
,, 18	5615	9·4	
,, 24	5621	9·6	
,, 26	5623	9·8	

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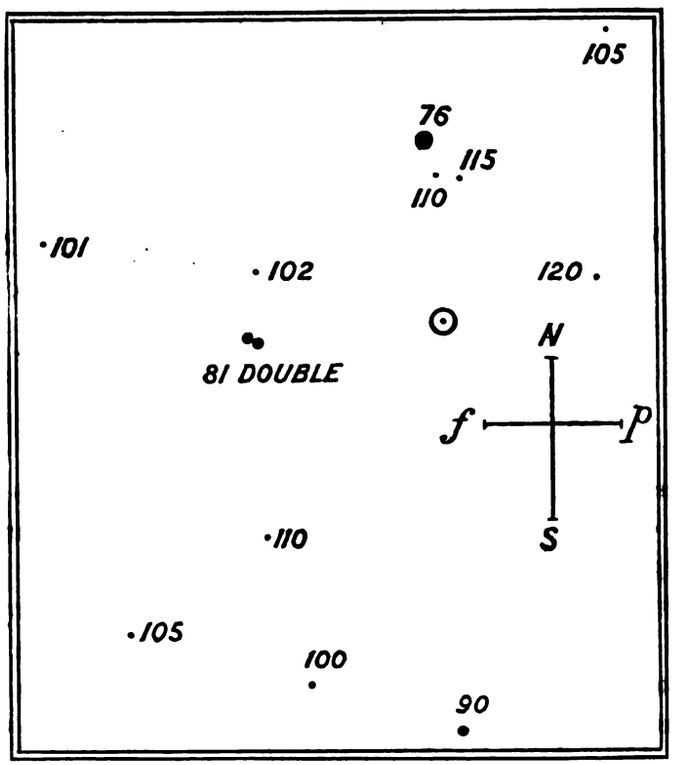
The comparison stars used in the observations made here will be found on the map.



NOTE.—The magnitudes have been multiplied by ten.
The cross-bars are :—From N. to S. = 5′ in Dec. From *p.* to *f.* = 20$^{secs.}$ in R.A.

The 7·6^{m} star some 5′ N. of the variable is yellow = 4, so that a good standard for colour is available. The mean colour for the variable star is = 4·6.

The Cordoba observation of 1879, June 29, may be taken, in a first approximation, as very near to a maximum, as on the same evening the 7·6^{m} star 5′ N. was observed and recorded as $8\frac{3}{4}$ mag.

The double star following the variable is *h* 4661 ; $4\frac{1}{2}''$.

The formula :—

J.D. 2415205+332^{d}·3 E.

satisfies the observations near maxima, as follows :—

Observation.	Calculation.	O.—C.	Epoch.	Observation.	Calculation.	O.—C.	Epoch.
J.D. 2397263	J.D. 2397261	+ 2^{d}	−54	J.D. 2414876	J.D. 2414873	+ 3^{d}	− 1
2407530:	407563	[−33]	−23	5205	5205	0	0
2414195:	14208	[−13]	− 3	5540	5535	+ 5	+ 1
4539	4540	− 1	− 2				

Range of Magnitude :— $\frac{7\cdot5}{8\cdot8}$ to <12·5

The elements of this star are very similar to those of 3482 RR Hydræ, see page 66B.

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5134. T LUPI.

C.Z. XIV. 897. Mag. 8·5. C.G.A. 19416. Mag. 8½. Cor. DM.—49°, No. 8685. Mag. 8·3 color.

	R.A.	Dec.
1875.	$14^h\ 14^m\ 4^s·8$	−49° 16′·6.
1900.	**14 15 43·2**	**−49 23·5.**

This star is missing on the C.P.D. plates, see No. 253 of the list on page xi. of Vol. II. of the C.P.D. Professor Kapteyn remarks " = T Lupi. Missing in *four* sweeps on *two* pairs of plates. Perhaps doubtful traces on *m* and *c*. In the original zones of Cordoba the star is noted *red*." As pointed out in Chandler's Third Catalogue of Variable Stars, the variability of this star was discovered by Miss Wells at the Harvard College Observatory in 1895. In the *Astrophysical Journal* for Dec. 1895, Mrs Fleming tells us that in using the photographic chart plates to identify this fourth type star, Miss L. D. Wells discovered distinct evidence of its variability. A further examination of photographs confirmed the variability, viz:—

1889.	Julian Day.	Mag.
May 24	2411147	11·2
June 13	1167	10·9
,, ,,	,,	11·2
July 2	1186	11·2
,, 4	1188	< 9·9
,, 9	1193	11·2
,, ,,	,,	11·2
1890.		
Apr. 20	1478	< 8·7
May 22	1510	10·9
,, 28	1516	11·1

1891.	Julian Day.	Mag.
May 21	2411874	10·9
,, ,,	,,	10·9
,, 27	1880	11·0
,, ,,	,,	11·2
1892.		
May 14	2233	11·2
,, 16	2235	10·6
,, 18	2237	< 10·4
Aug. 10	2321	< 10·0
,, 13	2324	< 9·9

1893.	Julian Day.	Mag.
Apr. 28	2412582	10·8
,, ,,	,,	11·0
May 1	2585	10·6
,, 10	2594	< 9·6
,, 15	2599	< 10·0
June 3	2618	11·1
,, 23	2638	10·8
,, ,,	,,	11·0
,, 26	2641	11·2
1894.		
Apr. 14	2933	10·8

1894.	Julian Day.	Mag.
Apr. 14	2412993	10·6
May 21	2970	10·6
,, 22	2971	10·8
July 26	3036	9·6!
1895.		
Mar. 12	3265	10·3
,, ,,	,,	10·4
Apr. 8	3292	10·4
,, 15	3299	9·2
,, 16	3300	9·8

The photographic range of magnitude is thus :—

9·2 to 11·2.

The visual observations made here are :—

	Julian Day.	Mag.	Colour.
1897, Apr. 2	2414017	8·7	9.
1899, June 9	4815	8·8	8.
,, ,, 11	4817	8·8	9.
,, ,, 24	4830	8·65	
,, ,, 25	4831	8·5	
,, ,, 26	4832	8·4	
,, July 5	4841	8·4	
,, ,, 10	4846	8·5	
,, ,, 18	4854	8·4	
,, ,, 30	4866	8·4	
,, Aug. 9	4876	8·4	
,, Sept. 1	4899	8·6	8·5.
,, ,, 6	4904	8·5	
,, ,, 12	4910	8·4	8.
,, ,, 24	4922	8·4	7·5.

	Julian Day.	Mag.	Colour.
1900, Jan. 23	2415043	8·75	8.
,, Feb. 2	5053	8·9	8·5.
,, ,, 12	5063	8·8	8.
,, ,, 27	5078	8·8	8.
,, Mar. 8	5087	8·65	red.
,, ,, 23	5102	8·4	8.
,, ,, 29	5108	8·6	8·5.
,, Apr. 3	5113	8·25	
,, ,, 16	5126	8·6	
,, ,, 18	5128	8·4	8.
,, ,, 28	5138	8·5	
,, May 15	5155	8·8	8.
,, June 8	5179	8·8	
,, ,, 26	5197	8·4	7.

The neighbourhood of this star is shewn on the map on the next page.

The visual range of magnitude is from :—

8·25 to 8·9
Colour = 8·0.

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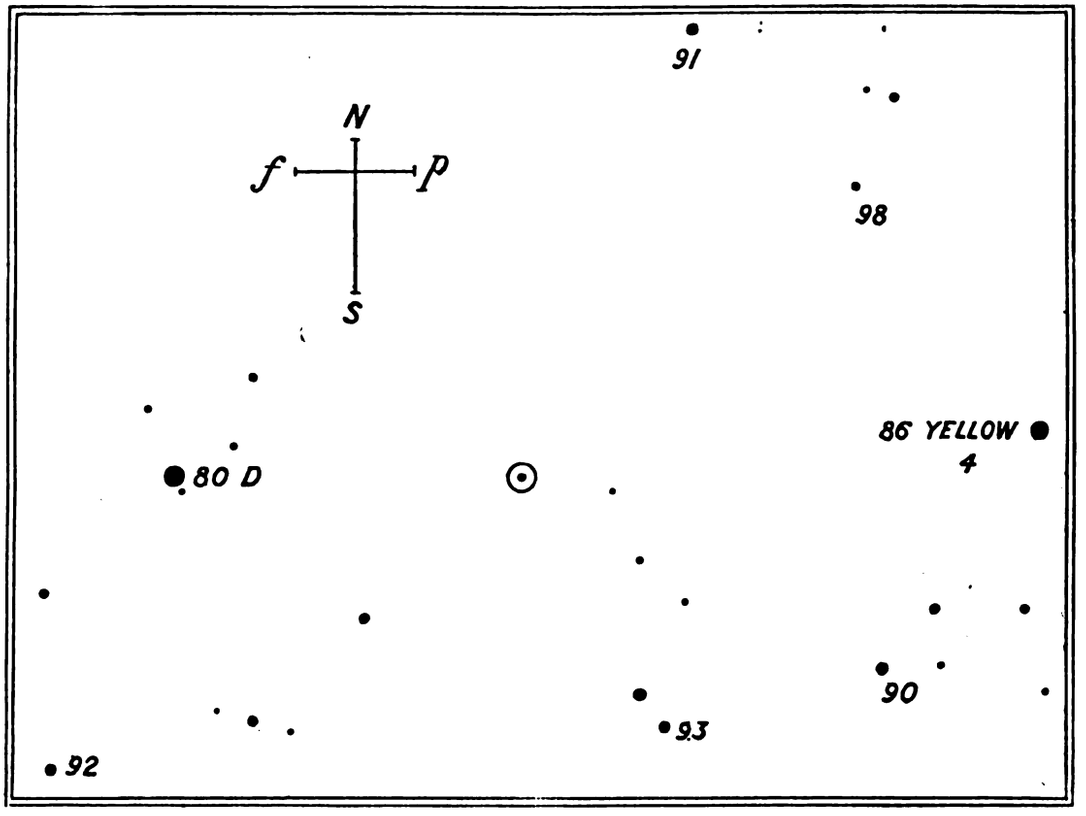
On account of the deep colour of this, star determinations of its magnitude are not easy. The Cape observations indicate at most only a very slight and irregular variation.



NOTE.—The magnitudes are multiplied by ten.
The cross-bars are 5′ from N. to S. and $24^{secs.}$ from *p.* to *f.*

5572. R NORMÆ.

Lacaille 6417. Cape 1880, No. 8466. C.G.A. 21089.

	R.A.	Dec.
1875.	$15^h\ 26^m\ 58^s{\cdot}4$	$-49°\ 5'{\cdot}2.$
1900.	**15 28 45·5**	**−49 10·4**

The observations of positions are :—

	Epoch.	R.A. 1875.	Dec. 1875.	
Lacaille,	1752·4	$15^h\ 26^m\ 57^s{\cdot}3$	$-49°\ 5'\ 11''$	1 obs.
Cape,	1876·5	58 ·24	13 ·4	3 ,,
Cordoba,	1876·6	58 ·40	14 ·6	4 ,,
,,	1877·6	58 ·44	14 ·7	2 ,,
,,	1894·3	58 ·4	12	...

This star does not appear in the C.P.D. It is No. 529 of the list of "Missing Stars" on p. xi. of the C.P.D., vol. 2. Its variability was first pointed out by Dr B. A. Gould in the *Uranometria Argentina*, page

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270—the data therein quoted being given below—and it is contained in Dr Chandler's Third Catalogue of Variable Stars amongst the unconfirmed variables. In the *Catalogo General Argentina* the star is called R Normæ and this name is adhered to. The "new" star of 1893 is designated R Normæ in Chandler's Catalogue, but this does not seem a sufficient reason for altering the name of the Cordoba variable.

This star—as proved by the Cape observations—is a most interesting variable with double maxima and minima.

The old observations are as follows :—

		Julian Day.	Mag.
Lacaille,	1752, June 12	2361128	7·0
Cordoba,	1875, ,, 18	2406058	inv. (below 9½ mag. ?).
,,	,, July 16	6086	,,
Cape,	1876, June 3	6409	[7·0]
,,	,, ,, 20	6426	
,,	,, ,, 24	6430	
Cordoba,	,, ,, 27	6433	8·0
,,	,, Aug. 5	6472	< 9·5 (this obs. seems erroneous).
,,	,, Aug.–Sept.	...	< 7·0 but only a little less.
,,	1877, July 27	6828	7¼
C.P.D. Plate,	1890, Apr. 29	2411487	inv.
,,	,, May 2	1490	,,

The Cape visual observations are :—

1897.	Julian Day.	Mag.	Colour.
Apr. 8	2414023	7·9	8.
,, 26	4041	8·0	8.
May 13	4058	8·0	7.
,, 22	4067	8·2	8.
Jun. 30	4106	8·0	red.
Aug. 12	4149	7·2	7·5.
,, 25	4162	7·0	8·5.
Sept. 2	4170	6·9	8·5.
,, 17	4185	7·1	
,, 24	4192	7·1	9.
Oct. 2	4200	7·2	7·5.
,, 18	4216	7·7	red.
1898.			
Feb. 13	4334	10·5	good.
Mar. 11	4360	10·8	
Apr. 3	4383	10·7	
,, 7	4387	10·5	
,, 15	4395	10·4	
,, 20	4400	10·0	
,, 26	4406	10·0	
,, 29	4409	9·8	
May 2	4412	9·6	
,, 7	4417	9·25	
,, 15	4425	9·1	
,, 18	4428	8·95	9.
,, 21	4431	8·9	
,, 26	4436	8·7	8.
,, 30	4440	8·4	6.
June 1	4442	8·4	
,, 8	4449	8·2	8.
,, 10	4451	8·0	
,, 14	4455	7·9	
,, 18	4459	7·9	8.
,, 22	4463	7·8	8.
,, 25	4466	7·7	
,, 30	4471	7·75	
July 9	4480	7·6	red.
,, 15	4486	7·5	
,, 17	4488	7·4	7.
,, 20	4491	7·5	
,, 25	4496	7·5	
Aug. 12	4514	7·7	
,, 18	4520	[7·8]	
,, 22	4524	7·7	
,, 25	4527	7·7	
,, 31	4533	7·8	
Sept. 13	4546	7·9	
,, 19	4552	8·0	
,, 24	4557	7·9	
,, 30	4563	8·1	
Oct. 7	4570	8·4	

1898.	Julian Day.	Mag.	Colour.
Oct. 12	2414575	8·35	
,, 15	4578	8·5	
,, 24	4587	8·0	
Nov. 2	4596	[8·0]	
1899.			
Feb. 2	4688	7·6	7.
,, 4	4690	7·5	red.
,, 18	4704	7·5	7.
Mar. 9	4723	8·3	
,, 21	4735	8·45	
Apr. 23	4768	9·4	
,, 28	4773	9·7	
May 2	4777	9·8	
,, 10	4785	10·3	
,, 14	4789	10·0	
,, 21	4796	10·0	
,, 25	4800	10·0	
June 7	4813	10·8	
,, 9	4815	10·5	
,, 11	4817	10·8	
,, 13	4819	10·85	
,, 18	4824	11·2	
,, 24	4830	< 10·0	
,, 25	4831	10·9	
,, 30	4836	10·9	
July 5	4841	11·5	
,, 10	4846	11·5	
,, 18	4854	11·5	
,, 27	4863	11·2	
Aug. 7	4874	12·0	
,, 14	4881	12±	
Sept. 1	4899	11·0	
,, 2	4900	10·7	
,, 6	4904	10·0	
,, 12	4910	9·8	
,, 16	4914	9·5	
,, 19	4917	9·15	
,, 24	4922	8·9	8.
,, 25	4923	8·7	
,, 27	4925	8·6	
,, 28	4926	8·6	
Oct. 1	4929	8·2	
,, 3	4931	8·1	
,, 6	4934	8·0	
,, 10	4938	7·85	
,, 14	4942	7·7	
,, 18	4946	7·6	
,, 22	4950	7·7	
,, 27	4955	7·7	
,, 29	4957	7·7	
Nov. 6	4965	[7·6]	

1899.	Julian Day.	Mag.	Colour.
Dec. 16	2415005	8·3	
1900.			
Jan. 6	5026	8·25	
,, 23	5043	8·3	
Feb. 2	5053	8·4	
,, 12	5063	7·95	
,, 27	5078	8·25	
Mar. 8	5087	8·0	
,, 16	5095	7·75	
,, 23	5102	7·6	6.
,, 29	5108	7·7	
,, 31	5110	7·7	
Apr. 3	5113	7·6	
,, 16	5126	7·5	
,, 18	5128	7·5	
,, 28	5138	7·4	
May 3	5143	7·5	7.
,, 5	5145	7·4	
,, 15	5155	7·5	
,, 20	5160	7·7	
,, 27	5167	7·6	
,, 28	5168	7·6	
,, 29	5169	7·6	
June 8	5179	7·7	
,, 20	5191	7·9	
,, 23	5194	8·15	
July 3	5204	8·35	
,, 6	5207	8·1	
,, 24	5225	8·35	
Aug. 1	5233	9·0	
,, 3	5235	9·0	
,, 14	5246	9·2	
,, 18	5250	9·3	
,, 28	5260	9·7	
Sept. 1	5264	10·0	
,, 7	5270	9·9	
,, 11	5274	10·9	
,, 18	5281	11·0	
1901.			
Feb. 1	5417	8·0	
,, 15	5431	7·8	7.
,, 25	5441	7·7	8.
,, 26	5442	7·65	6.
,, 27	5443	7·8	
Mar. 5	5449	7·5	
,, 10	5454	7·75	
,, 17	5461	7·8	7.
,, 18	5462	7·7	
,, 22	5466	7·85	
,, 25	5469	7·9	
,, 29	5473	7·8	

1901.	Julian Day.	Mag.	Colour.
Mar. 31	2415475	7·8	7.
Apr. 1	5476	7·7	7·5.
,, 4	5479	7·9	
,, 8	5483	7·8	
,, 11	5486	7·95	7·5.
,, 13	5488	7·95	
,, 15	5490	8·0	
,, 21	5496	8·0	
,, 24	5499	7·8	
May 5	5510	8·15	
,, 15	5520	8·25	
,, 17	5522	8·4	
,, 22	5527	8·35	
,, 27	5532	8·4	
June 8	5544	8·35	
,, 25	5561	8·2	
,, 29	5565	8·1	
July 8	5574	8·0	
,, 12	5578	7·95	
,, 16	5582	7·8	
,, 20	5586	7·8	8.
,, 24	5590	7·6	
Aug. 8	5605	7·4	7·5.
,, 10	5607	7·2	7.
,, 13	5610	7·3	7.
,, 17	5614	7·45	
,, 18	5615	7·3	
,, 19	5616	7·4	7.
,, 24	5621	7·0	7·5.
,, 26	5623	7·2	6·5.
,, 30	5627	7·0	7.
Sept. 3	5631	7·2	7.
,, 6	5634	7·3	7·5.
,, 9	5637	7·4	
,, 14	5642	7·2	
,, 17	5645	7·7	8.
,, 19	5647	7·4	
,, 20	5648	7·5	
,, 21	5649	7·7	
,, 24	4652	7·5	
,, 28	5656	7·7	
,, 30	5658	7·5	
Oct. 2	5660	7·7	
,, 5	5663	7·8	
,, 12	5670	7·9	8.
,, 15	5673	7·7	7·5.
,, 17	5675	7·8	
,, 30	5688	8·0	
1902.			
Jan. 31	5781	10·8	
Mar. 20	5829	< 11·0	

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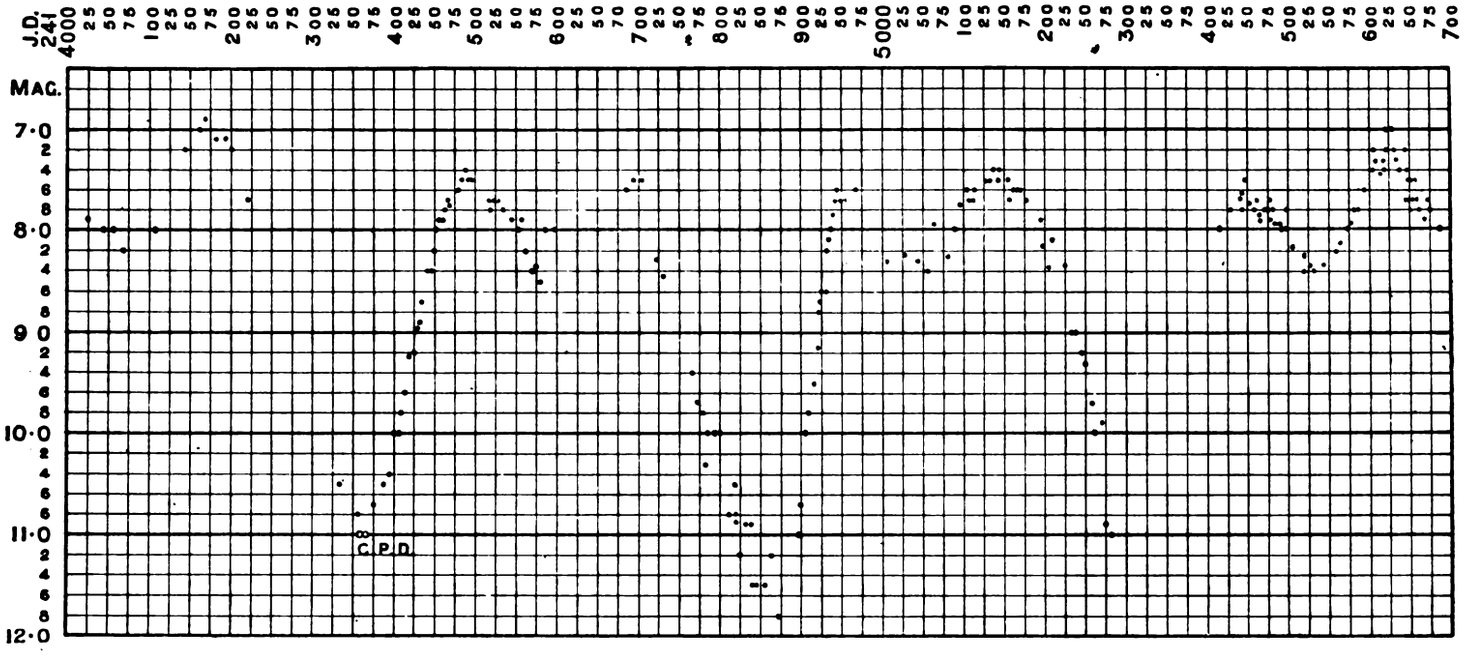
The observations, from 1897 to 1901, are plotted on the diagram.



Magnitude Curve of 5572. R NORMÆ.

[The observations (C.P.D.) have been brought up with 6 periods of 479 days.]

Observations made here in 1902 yield a maximum on J.D. 2415937.

We assume the following elements :—

Mag.		Julian Day.	M—m.
8·4	1st Minimum after Jan. 0, 1900 =	2415054	90d
6·9—7·4	1st Maximum ,, ,, ,, ,,	5144	
11·5	2nd Minimum ,, ,, ,, ,,	5327	107d
7·4—7·6	2nd Maximum ,, ,, ,, ,,	5446	

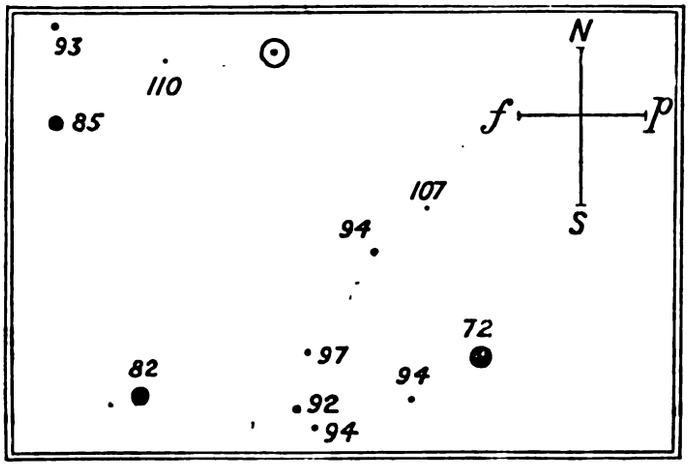
Complete Period = 480·7 days.
Colour = 7·4 when brighter than 8·0.
= 7·9 ,, fainter ,, 8·0.

These elements compare with observations as follows :—

Mag.	Observation.	Calculation.	O.—C.	Mag.	Observation.	Calculation.	O.—C.
7·0	2361128±	2361127	+ 1d.	7·6	2414950	2414965	−15
7·1	2406490±	2406491	− 1	7·4	15133	15144	−11
7·2	06828±	06793	+35	7·5	15448	15446	+ 2
6·9	14168	14183	−15	7·0	15623	15625	− 2
7·4	14487	14485	+ 2	7·6	15937	15927	+10
7·5	14690	14663	+27				

The formulæ are not inconsistent with the other observations, except that they give a maximum on J.D. 2406011, 47 days before the observations made at Cordoba in 1875 when the star was invisible, whereas at that period our hypothesis shews a magnitude of about 8·0.

The star can be readily identified by means of the following map.



NOTE.—The magnitudes have been multiplied by ten.
The cross-bars are :—From N. to S. = 5′ in Dec., from *p.* to *f.* = 24$^{secs.}$ in R.A.

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5608. U NORMÆ.

C.Z. XV. No. 2254, 9m. C.P.D. —54°, No. 6636.

	R.A.	Dec.
1875.	15h 32m 42s	—54° 54′·4.
1900.	**15 34 37**	**—54 59·3.**

Suspected by Professor J. C. Kapteyn on the evidence of the C.P.D. plates, viz.,—mag. according to $m = 9{\cdot}7$; mag. according to $c = 10{\cdot}2$, in Z.C. = 9·0.

The variability is proved in the *Astr. Journ.*, No. 470 of 1899, Oct. 11.

The C.P.D. plates are as follows:—

		Mag.
1890, Aug. 18	Julian Day 2411598	10·2
,, ,, 20	1600	9·7

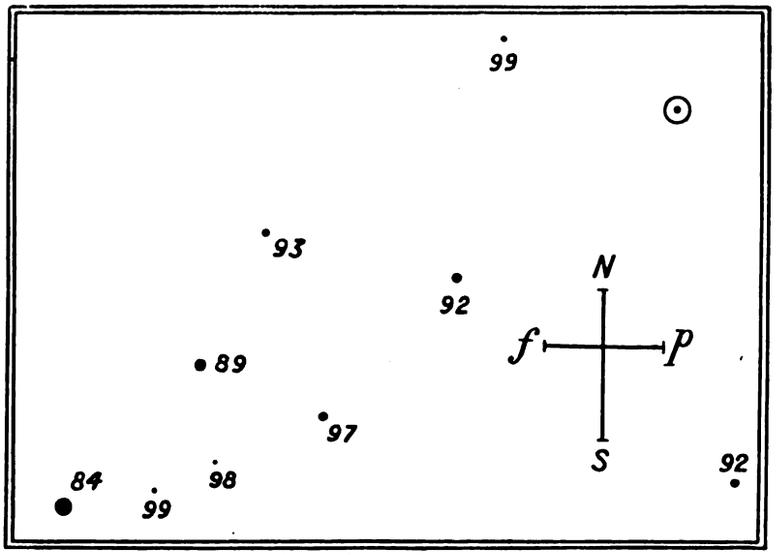
The Cape observations are:—

1897.	Julian Day.	Mag.	Colour.
June 30	2414106	8·5	7.
Aug. 12	4149	9·2	7.
,, 25	4162	9·35	
Sept. 3	4171	9·0	5.
,, 17	4185	9·0	8.
,, 24	4192	9·3	
Oct. 3	4201	9·4	
,, 14	4212	9·3	
1898.			
Apr. 7	4387	8·9	yellow.
,, 15	4395	8·75	red.
,, 29	4409	8·5	or.-red.
May 2	4412	8·9	
,, 7	4417	9·3	
,, 15	4425	8·9	red.
,, 18	4428	9·2	
,, 21	4431	8·9	
June 1	4442	9·2	
,, 8	4449	8·7	
,, 10	4451	9·1	
,, 14	4455	9·2	
,, 18	4459	8·6	
,, 23	4464	9·1	
,, 25	4466	9·3	
,, 30	4471	9·0	
July 9	4480	9·2	
,, 15	4486	8·8	
,, 20	4491	9·2	
,, 25	4496	8·8	
Aug. 6	4508	8·8	

1898.	Julian Day.	Mag.	Colour.
Aug. 12	2414514	8·9	
Oct. 17	4580	9·4	
,, 24	4587	8·8	
1899.			
May 19	4794	9·1	
,, 21	4796	9·25	
,, 25	4800	8·8	
,, 27	4802	8·8	
June 3	4809	9·25	
,, 6	4812	8·8	
,, 7	4813	8·75	
,, 9	4815	8·75	
,, 10	4816	8·75	
,, 11	4817	8·75	
,, 13	4819	8·9	
,, 13	,,	9·05	
,, 15	4821	9·2	
,, 18	4824	8·8	
,, 19	4825	8·8	7.
,, 22	4828	8·9	
,, 24	4830	8·85	
,, 25	4831	8·95	
,, 26	4832	9·2	
,, 26	,,	9·3	
,, 26	,,	9·2	
,, 27	4833	9·35	
,, 29	4835	9·1	7.
,, 30	4836	8·95	
July 1	4837	8·9	
,, 2	4838	8·9	

1899.	Julian Day.	Mag.	Colour.
July 4	2414840	8·75	
,, 5	4841	8·85	
,, 10	4846	9·35	
,, 12	4848	9·0	
,, 17	4853	8·7	
,, 18	4854	8·9	
,, 19	4855	8·9	
,, 22	4858	9·2	
,, 26	4862	8·9	
,, 27	4863	8·9	
,, 28	4864	8·7	
,, 30	4866	8·75	
Aug. 4	4871	9·2	
,, 7	4874	9·1	
,, 9	4876	8·75	
,, 10	4877	8·65	
,, 14	4881	9·0	7.
,, 16	4883	9·3	
,, 17	4884	9·1	
,, 31	4898	9·25	
Sept. 1	4899	9·1	
,, 2	4900	8·95	
,, 5	4903	8·7	
,, 6	4904	8·75	
,, 12	4910	9·15	
,, 16	4914	8·7	
,, 17	4915	8·65	
,, 18	4916	[9·0]	
,, 19	4917	8·8	
,, 20	4918	9·05	

1899.	Julian Day.	Mag.
Sept. 24	2414922	9·2
,, 25	4923	9·1
,, 26	4924	9·0
,, 27	4925	9·0
,, 28	4926	8·9
Oct. 1	4929	8·8
,, 3	4931	9·2
1900.		
May 27	5167	8·55
,, 28	5168	8·5
,, 29	5169	8·7
,, 31	5171	8·9
June 2	5173	9·0
,, 5	5176	9·2
,, 8	5179	8·8
,, 9	5180	8·65
,, 20	5191	8·8
,, 23	5194	8·8
,, 24	5195	8·7
,, 25	5196	8·75
,, 26	5197	9·0
,, 27	5198	9·1
,, 29	5200	9·15
July 1	5202	9·0
,, 3	5204	8·8
,, 4	5205	8·7
,, 5	5206	8·6
,, 6	5207	8·6
,, 7	5208	8·7
,, 8	5209	8·8



NOTE.—The magnitudes on the map have been multiplied by ten.
The cross-bars are:—From N. to S. = 5′ in Dec., from *p.* to *f.* = 30^{secs}, in R.A.

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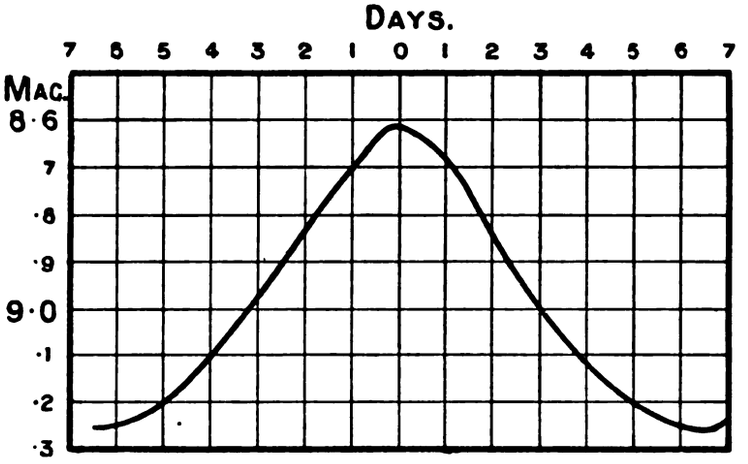
The observations for each of the years 1897, 1898, 1899 and 1900, plotted separately, using for that purpose a period of $12^d \cdot 7$ yield mean maxima as follows:—

	Interval.	Periods.
Julian Day $2414181^d \cdot 0$ (poor)		
4460 ·0	$279^d \cdot 0$	$22 \times 12 \cdot 68$
4839 ·4	379 ·4	$30 \times 12 \cdot 65$
5193 ·4	354 ·0	$28 \times 12 \cdot 64$

or a mean period equal to $12^d \cdot 655$.

The mean magnitude curve is shewn on the following diagram:—



Maximum—minimum = $6 \cdot 0^d$
Range of magnitude = 8·6 to 9·25
Colour = 7·0

The comparison stars used will be found on the map on page 108B.

A comparison with Dr Roberts's elements (A. J. 491-2) is:—

	Range in Mag.	M.—m.	Maxima, G.M.T.
Roberts:—	8·8 to 10·4	$4 \cdot 5^d$	J.D. $2415029 \cdot 0 + 12 \cdot 71^d$ E.
Cape:—	8·6 to 9·25	6·0	$5028 \cdot 8 + 12 \cdot 655$ E.

Other stars going through light changes in about the same period are:—

	Mag.	M.—m.	Period.
2509 ζ Geminorum	3·7 to 4·5	$5 \cdot 0^d$	$10 \cdot 154^d$
4364 S Muscæ	6·5 — 7·3	3·5	9·66
6442 Y Ophiuchi	6·2 — 7·0	6·2	17·12

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5618. T NORMÆ.

Cape 1880, No. 8527. C.P.D. – 54°, No. 6651.

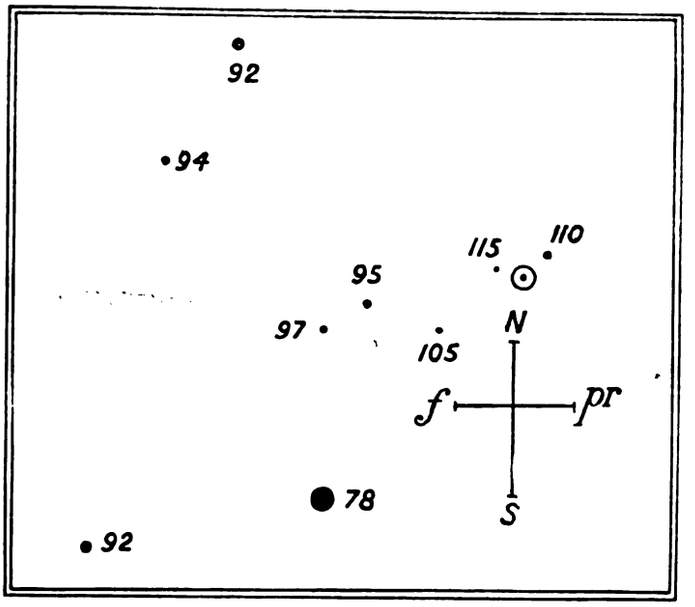
	R.A.	Dec.
1875.	$15^h\ 34^m\ 26^s{\cdot}4$	$-54°\ 35'{\cdot}1$.
1900.	**15 36 20·3**	**–54 40 ·0.**

The history of the discovery of this variable is given in the *Astr. Journ.*, No. 464 of 1899, June 14.
The determinations of magnitude made by the Cape Transit Circle observers are :—

		Mag.		Mag.
1876, Aug. 2	Julian Day 2406469	6	In the Cordoba	7·0
,, ,, 4	6471	6·7	scale, these are	7·3
,, ,, 6	6473	6·7	about	7·3

But as this star was probably first noticed when the Transit Circle observers were observing the neighbouring star Lac. 6482, which was a little earlier in 1876, it may be that the variable was at a maximum before August—perhaps as early as 1876, July 15.

The region of this variable star and the comparison stars used with it are shewn on the following map :—



NOTE.—The magnitudes on the map have been multiplied by ten.
From N. to S. is 5′ in Dec., from *pr.* to *f.* is $32^{secs.}$ in R.A.

From C.P.D. plates we have :—

		Mag.
1890, Aug. 20	J.D. 2411600	7·9.

The Cape observations follow. When the variable is brighter than about 7·5 mag. the magnitudes having been estimated with the finder of the 7-inch refractor require a correction of +0·3 mag. to bring them to

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the scale of the 7-inch itself. This correction is due to the difference of colour between the variable and the comparison star then used acting on the different colour diaphaneities of the two object glasses.

1899.	Julian Day.	Mag.	Colour.
Feb. 18	2414704	11·0	
,, 20	4706	10·5	
,, 21	4707	10·3	
Mar. 9	4723	9·7	
,, 21	4735	9·5	
Apr. 23	4768	7·3	4·
,, 28	4773	7·3	
May 3	4778	7·1	4·
,, 10	4785	7·6	5.
,, 11	4786	7·4	4·
,, 14	4789	7·4	
,, 19	4794	7·4	
,, 21	4796	7·4	
,, 25	4800	7·5	
,, 27	4802	7·6	
June 3	4809	7·7	
,, 6	4812	7·9	
,, 7	4813	8·0	
,, 9	4815	8·1	
,, 10	4816	8·2	4·
,, 11	4817	8·3	
,, 13	4819	8·3	
,, 15	4821	8·4	5.
,, 18	4824	8·5	
,, 19	4825	8·55	5.
,, 22	4828	8·3	
,, 24	4830	8·8	
,, 25	4831	8·9	
,, 26	4832	8·75	
,, 27	4833	8·9	
,, 29	4835	8·9	

1899.	Julian Day.	Mag.	Colour.
June 30	2414836	9·0	
July 1	4837	9·0	
,, 2	4838	8·95	
,, 4	4840	9·1	
,, 5	4841	9·0	
,, 10	4846	9·4	
,, 12	4848	9·3	
,, 17	4853	9·4	
,, 18	4854	9·6	
,, 19	4855	9·6	
,, 22	4858	9·6	
,, 26	4862	9·68	
,, 27	4863	9·7	
,, 28	4864	9·75	
,, 30	4866	9·9	
Aug. 4	4871	< 9·8	
,, 7	4874	10·6	
,, 9	4876	10·7	
,, 10	4877	<11	
,, 14	4881	11·4	
,, 31	4898	<11	
Sept. 1	4899	11·7	
,, 2	4900	12±	
,, 12	4910	<11·5	
,, 16	4914	<11·5	
,, 24	4922	12·0†	
,, 27	4925	12·0	
Dec. 16	5005	7·7	6.
1900.			
Jan. 6	5026	7·6	5.
,, 23	5043	7·6	5.

1900.	Julian Day.	Mag.	Colour.
Feb. 2	2415053	8·1	
,, 12	5063	8·4	
Mar. 8	5087	9·5	
,, 23	5102	10·3	
,, 29	5108	10·7	
Apr. 16	5126	<10·5	
,, 28	5138	11·5	
May 3	5143	12·0	
,, 20	5160	12·0	
,, 27	5167	<11·5	
,, 29	5169	11·5	
June 2	5173	12·0	
,, 8	5179	11·5	
,, 20	5191	11·3	
July 3	5204	11·0	
,, 6	5207	10·9	
,, 24	5225	9·25	
Aug. 1	5233	8·65	
,, 4	5236	8·4	
,, 7	5239	8·3	
,, 14	5246	8·3	
,, 18	5250	8·4	
,, 28	5260	8·2	
Sept. 1	5264	8·1	
,, 7	5270	8·4	
,, 11	5274	8·55	
,, 15	5278	8·3	
,, 18	5281	8·5	
Oct. 7	5300	8·65	
1901.			
Feb. 15	5431	10·1	

1901.	Julian Day.	Mag.	Colour.
Mar. 5	2415449	9·5	
,, 10	5454	9·37	
,, 17	5461	9·0	
,, 22	5466	8·8	
,, 25	5469	8·35	5.
,, 26	5470	8·35	
,, 29	5473	8·0	
,, 31	5475	7·85	4·
Apr. 1	5476	7·6	5.
,, 2	5477	7·6	4·5.
,, 3	5478	7·6	4
,, 4	5479	7·5	6.
,, 7	5482	7·5	6.
,, 8	5483	7·5	4·
,, 10	5485	7·5	5.
,, 12	5487	7·3	5.
,, 13	5488	7·3	5.
,, 15	5490	7·3	5.
,, 21	5496	6·8	4·
,, 23	5498	7·3	
,, 24	5499	7·3	6.
May 3	5508	7·3	4·
,, 5	5510	7·4	4·
,, 15	5520	7·3	5.
,, 17	5522	7·5	
,, 22	5527	7·6	
,, 27	5532	8·0	6.
June 2	5538	8·4	
,, 8	5544	8·35	6.
,, 12	5548	8·8	

These observations have been plotted on the diagram on p. 112B.

A comparison between maxima derived from the observations and the formula

$$\text{Maxima} = \text{J.D. } 2415017 + 243^{d}\cdot9\ E.$$

follows :—

Maximum. m	Date Observed. d	Computed.	O.—C. d
7·0V.	Julian Day 2406469 ± 20	2406480	−11
7·9P.	11600 20	11600	− 2
7·2V.	14780 5	14773	+ 7
7·5V.	15030 10	15017	+13
8·1V.	15263 5	15061	+ 2
7·2V.	15495 2	16005	−10

The column O.—C. and the different magnitudes attained at maximum suggest irregularities in the period.

$$\text{M—m.} = 108^{d}.$$

$$\text{Range of magnitude :—} \frac{7\cdot0}{8\cdot1} \text{ to } 12\cdot0$$

$$\text{Colour} = 4\cdot9.$$

Dr Roberts (*Astr. Journ.*, Nos. 491–492) gives the following elements derived from his observations in 1899.

$$\text{Range :—} \frac{\text{m. } 7\cdot0}{7\cdot5} \text{ to } <11\cdot4 \qquad \text{Maxima} = \text{J.D. } 2415028 + 244^{d}\cdot0\ E.$$

This variable star has a close resemblance to the variation of 5955 R Draconis, for which Dr Chandler's Third Catalogue gives :—

Colour.	Range. m. m.	M—m.	Period.
2·0	$\frac{6\cdot5}{8\cdot7}$ to $\frac{12}{13}$	112d	245d·6

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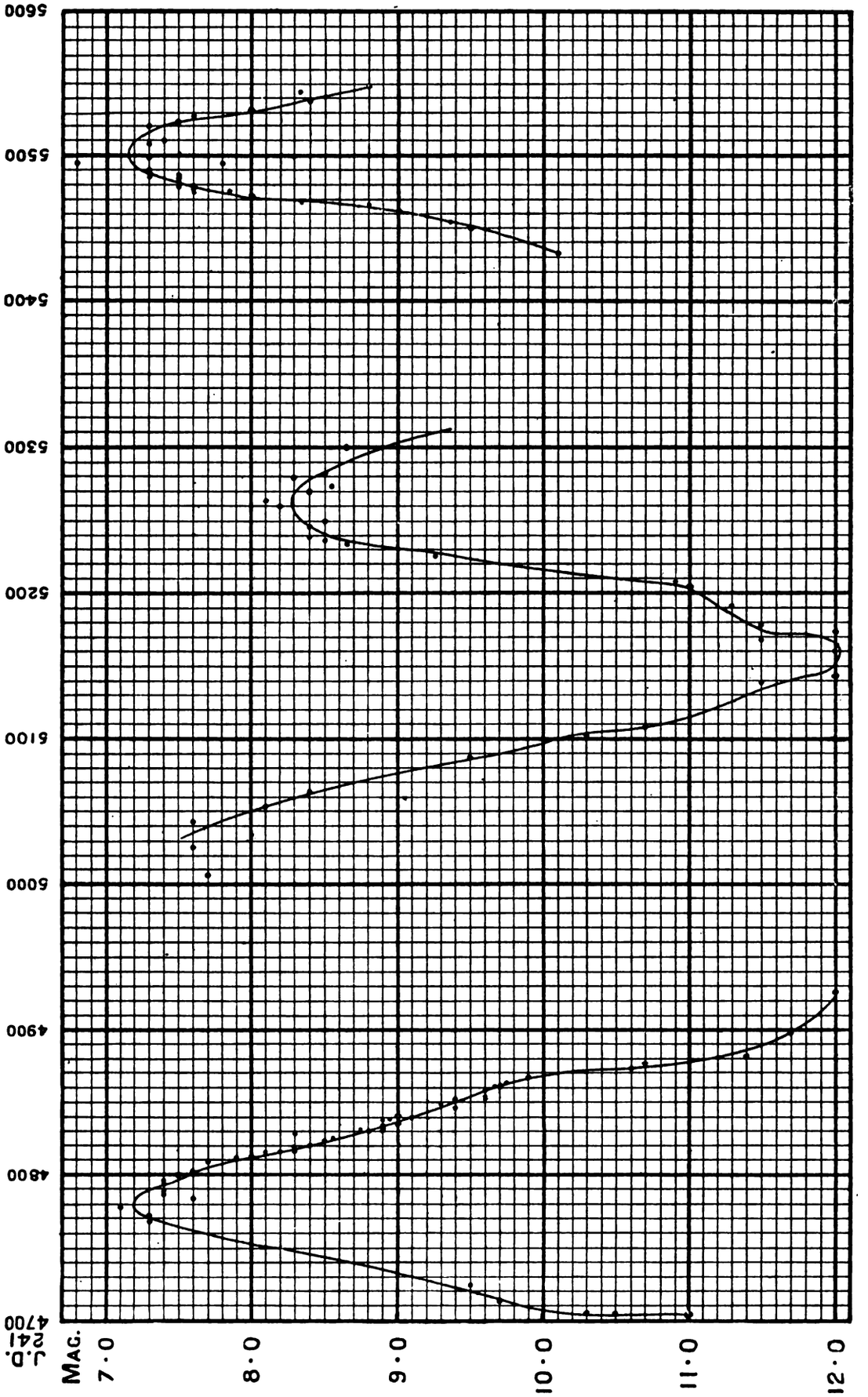

Magnitude Curve of 5618. T NORMÆ.

See page 111B.]

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5727. U LUPI.

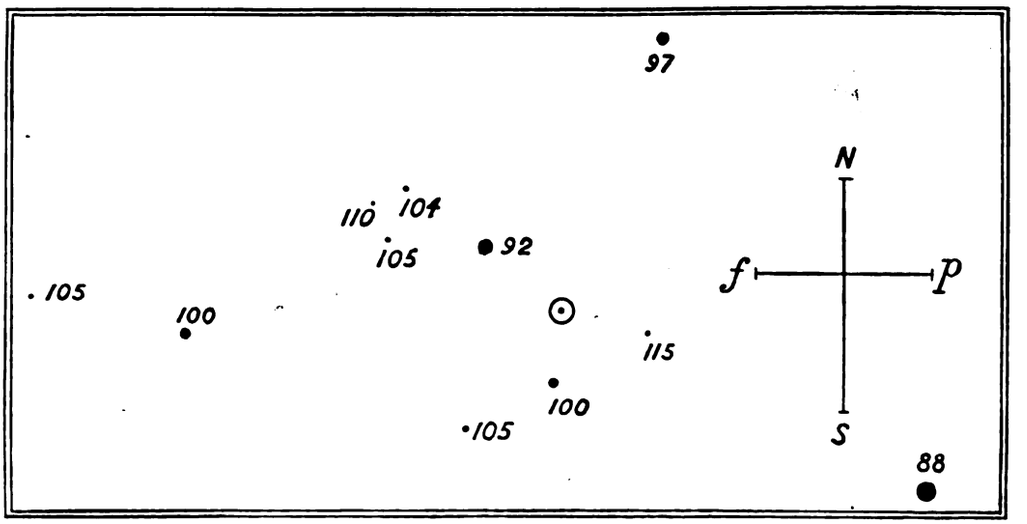
C.Z. XV., No. 3719, mag. 9½. Cor. DM. −29°, No. 12172, mag. 9·5.

	R.A.	Dec.
1875.	$15^h\ 52^m\ 56^s{\cdot}4$	−29° 33′·9.
1900.	**15 54 29·4**	**−29 38·3.**

This star is No. 132 of Professor Kapteyn's list of stars in catalogues of precision, but missing on the C.P.D. plates. [See C.P.D., Vol. I. p. (77).]

That the star is variable is pointed out in the *Astr. Journ.*, No. 442, of 1898 Aug. 22.

It is well situated for comparison as will be seen by the map.



NOTE:—The magnitudes have been multiplied by ten.
The cross-bars are:—From N. to S. = 5′ in Dec; from *p.* to *f.* = 20^{secs} in R.A.

The dates of the C.P.D. plates on which this star cannot be found are:—

1898, July 25 and July 28 = J.D. 2410834 and 2410837.

The Cape observations are:—

Date. 1896.	Julian Day.	Mag.	Colour.
Apr. 30	2413680	9·0	
June 4	3715	9·1	white.
,, 15	3726	9·15	,,
,, 28	3739	9·0	,,
Aug. 1	3773	9·1	
,, 8	3780	9·2	
,, 15	3787	9·6	
,, 23	3795	9·6	
Sept. 2	3805	10·3	good.
,, 3	3806	9·9	
,, 7	3810	10·5	
,, 11	3814	10·0	
,, 15	3818	9·9	
,, 19	3822	[9·8]	
,, 22	3825	9·8	
,, 30	3833	9·8	
Oct. 6	2413839	9·7	
,, 10	3843	9·8	
,, 25	3858	[9·6]	
1897.			
May 13	4058	9·05	
,, 22	4067	9·1	
,, 31	4076	9·05	
June 30	4106	9·15	
July 31	4137	9·2	
Aug. 5	4142	9·2	
,, 13	4150	9·1	
,, 20	4157	9·1	reddish.
,, 25	4162	9·2	
,, 29	4166	9·2	reddish.
Sept. 3	4171	9·15	7.
,, 17	4185	9·15	
Sept. 24	2414192	9·2	
Oct. 3	4201	9·1	
,, 18	4216	9·3	bad def.
,, 19	4217	9·1	
1898.			
Feb. 13	4334	9·2	
Apr. 7	4387	9·6	very good.
,, 15	4395	9·95	,,
,, 20	4400	10·5	,,
,, 29	4409	11·0	
May 7	4417	<10	Moon.
,, 15	4425	10·5	
,, 18	4428	10·4	
,, 21	4431	10·4	
,, 26	4436	9·95	
,, 27	4437	9·9	
May 30	2414440	9·65	
June 1	4442	9·5	
,, 6	4447	9·75	
,, 8	4449	9·75	
,, 10	4451	9·8	
,, 13	4454	9·8	
,, 18	4459	9·85	
,, 22	4463	9·85	
,, 25	4466	9·9	
,, 30	4471	9·9	
July 9	4480	9·9	
,, 15	4486	10·0	
,, 17	4488	10·1	
,, 20	4491	9·95	
Aug. 6	4508	9·7	
,, 12	4514	9·5	

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The Cape observations—*continued.*

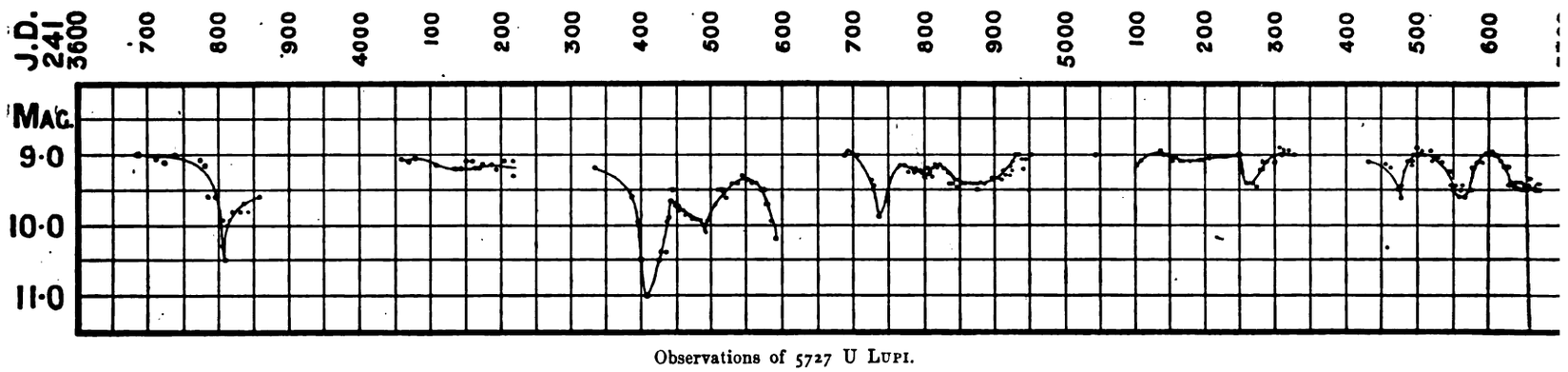
Date. 1898.	Julian Day.	Mag.	Colour.
Aug. 13	2414515	9·5	
,, 18	4520	9·5	
,, 19	4521	9·55	
,, 21	4523	9·6	
,, 31	4533	9·4	
Sept. 6	4539	9·4	
,, 13	4546	9·3	
,, 19	4552	9·35	
,, 24	4557	9·4	
,, 30	4563	9·4	
Oct. 7	4570	9·5	
,, 12	4575	9·7	
,, 15	4578	9·7	
,, 17	4580	9·95	
,, 24	4587	10·2	
1899.			
Feb. 2	4688	9·0	very good.
,, 4	4690	8·95	
,, 18	4704	9·0	
Mar. 9	4723	9·35	
,, 11	4725	9·45	
,, 21	4735	9·85	
Apr. 23	4768	9·15	
,, 28	4773	9·15	
May 3	4778	9·25	
,, 10	4785	9·2	
,, 11	4786	9·25	
,, 14	4789	9·2	
,, 19	4794	9·25	
,, 21	4796	9·25	
,, 25	4800	9·3	
,, 27	4802	9·2	
June 3	4809	9·25	
,, 7	4813	9·3	
,, 9	4815	9·2	
,, 13	4819	9·15	
,, 15	4821	9·2	
,, 18	4824	9·15	
,, 19	4825	9·15	

Date. 1899.	Julian Day.	Mag.	Colour.
June 24	2414830	9·2	
,, 27	4833	9·4	
,, 29	4835	9·4	
,, 30	4836	9·25	
July 2	4838	9·4	
,, 6	4842	9·35	
,, 10	4846	9·45	
,, 12	4848	9·35	
,, 17	4853	9·4	
,, 18	4854	9·4	
,, 26	4862	9·4	
,, 30	4866	9·4	
Aug. 4	4871	9·4	
,, 7	4874	9·5	very good.
,, 9	4876	9·4	
,, 16	4883	9·4	
Sept. 1	4899	9·35	
,, 2	4900	9·35	
,, 6	4904	9·35	
,, 12	4910	9·35	
,, 16	4914	9·25	
,, 19	4917	9·3	
,, 24	4922	9·3	
,, 26	4924	9·25	
,, 27	4925	9·15	
Oct. 1	4929	9·1	
,, 3	4931	9·0	5.
,, 6	4934	9·0	
,, 10	4938	9·05	
,, 14	4942	9·2	low.
,, 18	4946	9·05	
,, 22	4950	[9·0]	
1900.			
Jan. 23	5043	9·0	
Mar. 23	5102	9·15	
,, 29	5108	9·1	
Apr. 28	5138	8·95	good.
May 3	5143	9·0	
,, 6	5146	9·0	

Date. 1900.	Julian Day.	Mag.	Colour.
May 15	2415155	9·1	
,, 20	5160	9·05	
,, 27	5167	9·1	
,, 29	5169	9·1	
June 8	5179	9·1	
,, 20	5191	9·1	
,, 23	5194	9·1	
July 3	5204	9·05	
Aug. 18	5250	9·0	
,, 28	5260	9·4	
,, 28	5260	9·4	
,, 30	5262	9·4	
Sept. 1	5264	9·4	
,, 7	5270	9·4	good.
,, 11	5274	9·45	
,, 15	5278	9·2	good.
,, 17	5280	9·2	
,, 18	5281	9·1	
,, 23	5286	9·1	
Oct. 7	5300	9·1	
,, 15	5308	8·9	
,, 17	5310	9·0	
,, 20	5313	8·95	
,, 26	5319	8·95	
Nov. 2	5326	9·0	
1901.			
Feb. 15	5431	9·1	
Mar. 10	5454	9·15	
,, 17	5461	9·2	
,, 22	5466	[9·45]	
,, 26	5470	9·5	low.
,, 30	5474	9·6	,,
Apr. 1	5476	9·45	good.
,, 3	5478	9·45	
,, 8	5483	[9·2]	
,, 10	5485	9·1	
,, 11	5486	9·1	
,, 13	5488	9·1	
,, 14	5489	9·15	

Date. 1901.	Julian Day.	Mag.	Colour.
Apr. 21	2415496	9·0	
,, 23	5498	9·0	
,, 24	5499	8·9	
May 3	5508	8·95	
,, 5	5510	9·0	
,, 15	5520	8·95	
,, 17	5522	9·1	
,, 19	5524	9·05	
,, 22	5527	9·05	
,, 27	5532	9·1	
June 8	5544	9·25	
,, 12	5548	9·45	
,, 14	5550	9·5	
,, 15	5551	9·45	
,, 21	5557	9·6	
,, 22	5558	9·5	
,, 25	5561	9·45	
,, 29	5565	9·6	
July 9	5575	9·5	
,, 12	5578	9·2	
,, 16	5582	9·1	
,, 21	5587	9·1	
Aug. 8	5605	8·95	
,, 13	5610	9·0	
,, 18	5615	9·1	
,, 24	5621	9·2	4.
,, 26	5623	9·2	
,, 30	5627	9·45	
Sept. 3	5631	9·4	
,, 6	5634	9·45	
,, 9	5637	9·4	
,, 14	5642	9·4	
,, 17	5645	9·5	
,, 18	5646	9·45	
,, 20	5648	9·45	
,, 24	5652	9·35	
,, 30	5658	9·5	
Oct. 2	5660	9·5	
,, 5	5663	9·4	

The variation of this star seems to be very irregular. The observations have been plotted (see diagram).



Observations of 5727 U LUPI.

The curious form of the light curve will be remarked. There is a slight trace of periodicity every 87 days, but some minima are entirely missed.

The star is somewhat faint for colour determination with the 7-inch. A consideration of the few observations made for that purpose indicates a colour between 3 and 4 which may be taken as a full yellow. This shows that the star is not likely to be an Algol-type variable, as all known variables of that class are white.

The remarks "good," "low," etc., in the colour column refer to the circumstances of the observation, not to the colour of the star.

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5752. R Z SCORPII.

C.Z. XV., No. 4006. O. Stone, No. 4834. Cor. DM.—23°, No. 12676.

	R.A.	Dec.
1875.	$15^h\ 57^m\ 7^s{\cdot}7$	—23° 45′·2.
1900.	**15 58 37·1**	**—23 49·4.**

This star is No. 136 of Professor J. C. Kapteyn's list of stars contained in catalogues of precision but missing on the C.P.D. plates. [See C.P.D., Vol. I. p. (78).] Proof of variability was published in the *Astr. Nachr.*, No. 3389, of 1896 Nov. 30; confirmations were published by Mr R. H. West in the *Astr. Journ.*, No. 414, of 1897 Oct. 6, and by Mr Hugh Wright in No. 425 of the same journal (1898 Jan. 22). The results of Cape observations are given in the *Astr. Journs.*, No. 442 (1898 Aug. 22) and No. 468 (1899 Aug. 29).

The observations found are :—

Authority.	Date.	Julian Day.	Mag.
Washington	1848, June 20	2396199	nil.
Argelander	1851, ,, 8	7282	,,
Cordoba Z.C.	1873, ,, 13	2405323	8·5
Ormond Stone			9·0
Cordoba DM.	1886, May 24	2410051	10·0
,, ,,	,, ,, 27	10054	9·7
,, ,,	1887, ,, 15	10407	9·3
,, ,,	1891, Aug. 31	11976	9·3
C.P.D. plate	1888, ,, 24	10874	nil.
,,	,, Sept. 28	10909	,,
West, R. H.	1897, May 4	14049	10·0
,,	,, June 25	14101	10·4
,,	,, Aug. 25	14162	9·35
Wright, Hugh	,, Apr. 30	14045	9·6
,,	,, May 1	14046	9·7
,,	,, ,, 2	14047	9·8
,,	,, ,, 3	14048	9·7
,,	,, ,, 4	14049	9·8

Authority.	Date.	Julian Day.	Mag.
Wright, Hugh	1897, May 5	2414050	9·8
,,	,, ,, 6	14051	9·8
,,	,, ,, 7	14052	9·9
,,	,, ,, 8	14053	9·9
,,	,, ,, 9	14054	9·9
,,	,, ,, 11	14056	9·9
,,	,, ,, 23	14068	10·0
,,	,, ,, 26	14071	10·0
,,	,, June 2	14078	10·3
,,	,, ,, 29	14105	10·1
,,	,, July 2	14108	10·0
,,	,, ,, 5	14111	9·9
,,	,, ,, 28	14134	9·6
,,	,, Aug. 19	14156	9·4
,,	,, ,, 23	14160	9·5
,,	,, ,, 25	14162	9·4
,,	,, ,, 28	14165	9·4
,,	,, ,, 30	14167	9·4

The Cape observations are :—

Date.	Julian Day.	Mag.	Colour.
1896.			
May 9	2413689	9·0	
,, 12	13692	8·5	[orange].
,, 13	13693	8·5	yellow.
June 8	13719	9·5	white.
,, 15	13726	9·5	,,
,, 28	13739	9·8	[red].
Aug. 1	13773	9·9	
,, 8	13780	10·0	
,, 16	13788	9·7	
,, 23	13795	9·6	
,, 28	13800	9·5	
,, 29	13801	9·5	
Sept. 2	13805	9·4	
,, 3	13806	9·4	
,, 7	13810	9·3	[orange].
,, 15	13818	8·5	orange.
,, 22	13826	8·2	
,, 26	13829	8·7	
,, 30	13833	8·4	[yellow].
Oct. 6	13839	8·1	
,, 7	13840	8·3	
,, 10	13843	8·0	
1897.			
May 22	14067	<11·0	
,, 31	14076	11·5	
June 30	14106	10·5	
July 31	14137	9·6	
Aug. 13	14150	9·4	8.
Sept. 2	14170	9·4	6·5.

Date.	Julian Day.	Mag.	Colour.
1897.			
Sept. 5	2414173	9·6	
,, 17	14185	9·4	
,, 18	14186	9·5	
,, 23	14191	9·5	
,, 25	14193	9·4	
Oct. 3	14201	9·8	
,, 19	14217	<10·0	
1898.			
May 16	14426	10·4	
,, 26	14436	9·65	
June 1	14442	9·3	
July 9	14480	8·7	red.
,, 15	14486	8·9	
,, 17	14488	8·9	
Aug. 6	14508	9·3	
,, 13	14515	9·3	
,, 19	14521	9·4	
,, 23	14525	9·75	
,, 31	14533	10·0	
Sept. 13	14546	11·2	
,, 19	14552	11·3	
Oct. 8	14571	inv.	
,, 17	14580	inv.	
1899.			
Feb. 2	14688	9·6	
Apr. 23	14768	8·7	
May 3	14778	8·75	yellow.
,, 11	14786	8·4	6.

Date.	Julian Day.	Mag.	Colour.
1899.			
May 14	2414789	8·65	
,, 19	14794	8·5	
,, 21	14796	8·6	
,, 25	14800	8·7	
,, 27	14802	8·5	
June 3	14809	8·5	
,, 6	14812	8·7	
,, 9	14815	8·75	
,, 13	14819	8·8	
,, 18	14824	8·9	
,, 24	14830	9·05	
,, 30	14836	9·15	
July 1	14837	9·3	
,, 10	14846	9·4	
,, 17	14853	9·5	
,, 26	14862	10·0	
,, 28	14864	10·2	
,, 30	14866	10·6	
Aug. 4	14871	10·6	
,, 7	14874	10·4	
,, 9	14876	11·5	
Sept. 1	14899	10·8	
,, 2	14900	10·3	
,, 6	14904	10·0	
,, 12	14910	9·8	
,, 16	14914	9·6	
,, 19	14917	9·5	
,, 24	14922	9·6	

Date.	Julian Day.	Mag.	Colour.
1899.			
Sept. 26	2414924	9·4	
,, 27	14925	9·6	
Oct. 1	14929	9·3	
,, 3	14931	9·3	
,, 6	14934	9·2	
,, 10	14938	9·25	
,, 14	14942	9·2	
,, 18	14946	9·1	
,, 22	14950	9·05	
1900.			
Jan. 23	15043	10·0	
Mar. 23	15102	9·8	
May 3	15143	8·9	
,, 6	15146	8·85	
,, 21	15161	9·05	
,, 29	15169	9·1	
June 8	15179	9·2	
,, 20	15191	9·3	
July 3	15204	9·75	
Aug. 18	15250	9·8	
Sept. 1	15264	9·4	
,, 15	15278	9·15	
,, 18	15281	9·15	
Oct. 15	15308	9·05	
1901.			
Feb. 15	15431	8·9	
Mar. 9	15453	8·9	
Apr. 1	15476	9·0	

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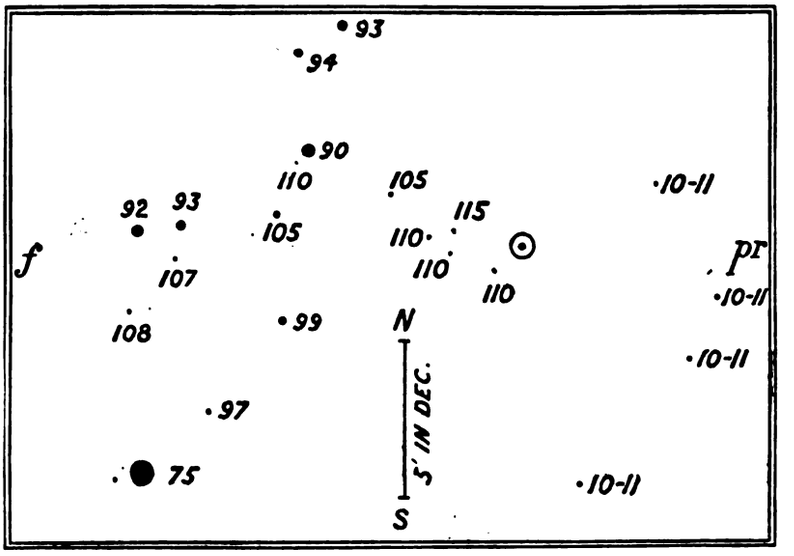
The star can be identified by aid of the map.



NOTE.—The magnitudes of the comparison stars on the map have been multiplied by ten.

The Cape observations have been plotted, but are not sufficiently continuous to justify reproduction. The dates of maxima (with their *a priori* probable maximum deviation from the true date of maximum) have been derived from the plotted curve; to these are added the older dates which were near times of maxima with their allowable deviations. These maxima have been compared with the following formula :—

$$\text{Maxima} = \text{J.D. } 2414965 + 158^{d}\cdot0\ \text{E.} + 20^{d}\cdot0 \sin (22^{\circ}\cdot5 \times \text{E.}).$$

The column O.—C. exhibits the differences between the dates of maxima as inferred from the observations and from the formula.

Observation.	Calculation.	O.—C.	Epoch.	Observation.	Calculation.	O.—C.	Epoch.
J.D. 2405323 ± 40^{d}	J.D. 2405309	+14^{d}	−61	J.D. 2414470 ± 5^{d}	J.D. 2414473	− 3^{d}	3
2410407 ± 50	2410365	+42	29	4790 ± 5	4799	− 9	−1
1976 ± 50	1981	− 5	19	4965 ± 20	4965	± 0	0
3685 ± 20	3701	−16	8	5140 ± 20	5131	+ 9	+1
3840 ± 10	3851	−11	7	5295 ± 30	5295	± 0	2
4160 ± 20	4157	+ 3	5				

The representation will be slightly improved by using the period

$$157^{d}\cdot8.$$

The term

$$20^{d}\cdot0 \sin 22\cdot5\ \text{E.}^{\circ}$$

does not improve the old observations. This is due to the uncertainty of the rate of motion of the variable term, as well as to the uncertainty of the period.

Range of magnitude :— $\frac{8\cdot0}{9\cdot3}$ to $\frac{11\cdot5}{\text{inv.}}$.

The star is generally invisible in the 7-inch refractor at minimum.

M—m = 75^{d} ? Colour = 6.

The variation of this star is very similar to that of 7571 V Capricorni, for which the following elements are given in Dr Chandler's *Third Catalogue of Variable Stars* :—

Range.	Period.
9^{m} to 14^{m} ?	157^{d}·1 E. + 15^{d} sin (10° E. + 100°).

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5941. S T SCORPII.

C.Z. XVI., No. 1980. Cor. DM. −30°, No. 13283.

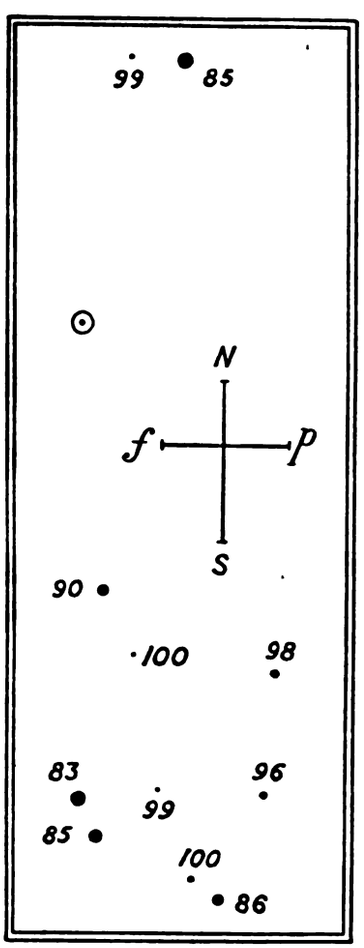
	R.A.	Dec.
1875.	$16^h\ 28^m\ 38^s{\cdot}8$	−30° 58′·5.
1900.	**16 30 13·8**	**−31 1·8.**

This star is No. 149 of Professor Kapteyn's list of stars contained in catalogues of precision, but missing on the C.P.D. plates. [See C.P.D., Vol. I. p. (79).]

That the star is variable is pointed out in the *Astr. Journ.*, No. 442, of 1898 Aug. 22.

In the C.Z. Catalogue its mag. = 9·0; in the Cor. DM. it is 8·9.

The star can be identified by aid of the map.



NOTE:—The magnitudes on the map have been multiplied by ten.
The cross-bars are:—From N. to S. = 5′ in Dec.; from *p.* to *f.* = 20^{secs} in R.A.

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The visual observations made here are :—

Date.	Julian Day.	Mag.	Colour.
1896.			
May 7	2413687	9·5	very red.
,, 10	13690	9·5	red.
June 13	13724	9·6	,,
Aug. 1	13773	9·3	,,
,, 23	13795	9·3	,,
,, 28	13800	9·2	,,
Sept. 2	13805	9·3	very red.
,, 7	13810	9·5	
,, 15	13818	9·7	red.
,, 22	13825	9·5	,,
,, 26	13829	9·5	,,
Oct. 6	13839	[10]	
,, 7	13840	9·5	very red.
,, 20	13853	9·3	
1897.			
June 1	14077	9·3	8.
July 2	14108	8·8	8.
Aug. 5	14142	8·9	orange.
,, 13	14150	8·9	8.
Sept. 3	14171	7·8	8.
,, 5	14173	8·3	8·5.
,, 17	14185	8·7	
,, 23	14191	9·0	8.
,, 25	14193	8·5	8.
Oct. 3	14201	8·9	8.
,, 19	14217	8·6	8.

Date.	Julian Day.	Mag.	Colour.
1898.			
May 16	2414426	8·7	orange.
,, 26	14436	9·0	8.
June 10	14451	8·4	8·5.
,, 22	14463	8·0	
,, 30	14471	7·8	8.
July 9	14480	8·7	red.
,, 15	14486	7·8	
,, 20	14491	8·6	
Aug. 13	14505	8·5	
,, 19	14511	8·4	
Sept. 13	14546	8·8	
,, 19	14552	8·4	
,, 30	14563	8·9	
Oct. 8	14571	8·8	
,, 17	14580	8·4	
1899.			
May 3	14778	9·0	red.
,, 11	14786	9·5	7.
,, 14	14789	9·65	
,, 19	14794	9·5	
,, 27	14802	9·5	
June 6	14812	9·3	
,, 9	14815	9·4	
,, 13	14819	9·2	
,, 15	14821	9·0	8.
,, 18	14824	9·2	

Date.	Julian Day.	Mag.	Colour.
1899.			
June 24	2414830	9·3	
,, 27	14833	9·2	
July 1	14837	9·0	
,, 10	14846	8·8	
,, 12	14848	8·9	
,, 18	14854	8·8	7.
,, 26	14862	8·7	7.
,, 30	14866	8·5	
Aug. 7	14874	8·8	
,, 9	14876	8·7	
,, 16	14883	8·6	7.
Sept. 1	14899	8·5	
,, 5	14903	8·5	8.
,, 6	14904	8·55	
,, 12	14910	8·7	
,, 16	14914	8·5	
,, 19	14917	8·6	
,, 24	14922	8·6	
,, 26	14924	8·6	
Oct. 3	14931	8·7	8.
,, 6	14934	8·6	7·5.
,, 10	14938	8·8	8.
,, 18	14946	8·85	
,, 22	14950	8·8	
Nov. 7	14966	[8·8]	
Mar. 23	15102	8·8	

Date.	Julian Day.	Mag.	Colour.
1900.			
May 3	2415143	9·0	
,, 21	15161	8·9	
,, 29	15169	9·2	
June 8	15179	8·75	
,, 20	15191	8·8	
July 3	15204	8·8	
,, 24	15225	8·8	
Sept. 2	15265	8·8	
Oct. 15	15308	8·8	
1901.			
Feb. 15	15431	9·3	8.
Mar. 9	15453	9·3	
Apr. 1	15476	9·0	red.
,, 3	15478	8·8	8.
,, 24	15499	8·9	
May 5	15510	8·8	
,, 15	15520	8·8	
,, 27	15532	8·85	
June 8	15544	8·8	
July 21	15618	8·8	7.
Sept. 3	15631	8·9	
,, 14	15642	8·9	
,, 21	15649	8·9	
Oct. 12	15670	9·0	
,, 30	15688	9·1	

This star is irregularly variable. The extreme magnitudes recorded here are :—

7·8 on 3 occasions.
9·6–9·7 ,, ,, ,,

The star is red = 7·8 on Chandler's scale. This makes magnitude-estimations difficult, but the range 7·8–9·7 = 1·9 mag. is far beyond the possibility of error.

The following grouping of the observations is instructive :—

Date.	Mean Magnitude.
1896, May–June	9·53
,, Aug.–Oct.	9·41
1897, June–July	9·05
,, Aug.–Oct.	8·62
1898, May–July	8·38
,, Aug.–Oct.	8·60
1899, May	9·43
,, June	9·23
,, July	8·78

Date.	Mean Magnitude.
1899, Aug.	8·70
,, Sept.	8·57
,, Oct.	8·75
1900, Mar.–July	8·88
,, Sept.–Oct.	8·80
1901, Feb.–Apr.	9·10
,, Apr.–June	8·83
,, July–Sept.	8·88

Recent observations, 1902, Jan. 31–July 14 (9) range from 8·8 to 9·3 mag.

6019. R R OPHIUCHI.

Porter, No. 2769. B.D. — 19°, No. 4435. C.P.D. — 19°, No. 6028.

	R.A.	Dec.
1875.	$16^h\ 41^m\ 43^s$	—19° 14′·3.
1900.	**16 43 10**	**—19 17 ·2.**

The variability of this star is pointed out by Professor J. C. Kapteyn on pages (93) and (94) of the C.P.D., Vol. I. Confirmation was given in the *Astr. Journ.*, No. 442, of 1898 Aug. 22; further results of observations will be found in No. 468 of the same journal for 1899 Aug. 29.

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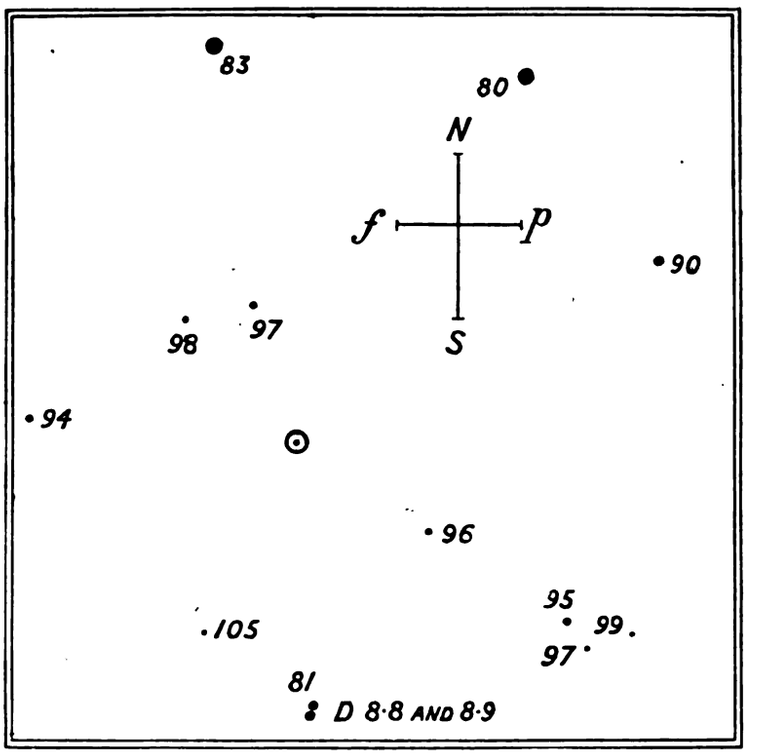
The neighbourhood of the variable is shown on the map.



NOTE :—The magnitudes on the map are multiplied by ten.
The cross-bars are :—From N. to S. = 5′ in Dec. ; from *p.* to *f.* = 20$^{secs.}$ in R.A.

The observations found are :—

Authority.	Date.	Julian Day.	Mag.
Washington (W.Z.)	1849, June 21	2396565	9·0
Schönfeld (B.D.)			8·8
Porter	1885, June 18	2409711	8·5
C.P.D. plate	1888, Aug. 24	10874	<9·9
,,	,, Oct. 22	10933	9·2

The Cape observations are :—

Date 1898.	Julian Day.	Mag.	Colour.
May 13	2414423	11·5	
,, 26	14436	9·9	
,, 30	14440	9·75	
June 1	14442	9·75	
,, 8	14449	[9·65]	low down.
,, 10	14451	9·6	
,, 14	14455	9·35	
,, 18	14459	9·1	(red).
,, 22	14463	8·7	
,, 25	14466	8·8	(orange).
,, 30	14471	8·7	orange.
July 8	14479	8·6	red.
,, 15	14486	8·6	orange.
,, 20	14491	8·7	
,, 25	14496	8·5	orange.
Aug. 6	14508	8·8	
,, 19	14521	9·5	
,, 23	14525	9·45	
Sept. 5	14538	9·65	
,, 13	14546	9·8	
,, 24	14557	10·5	
,, 30	14563	11·0	
Oct. 8	14571	inv.	
,, 17	14580	inv.	

Date 1899.	Julian Day.	Mag.	Colour.
Feb. 4	2414690	inv.	
Apr. 23	14768	8·2	
May 3	14778	8·0	6.
,, 11	14786	8·3	
,, 14	14789	8·05	4.
,, 19	14794	8·2	
,, 25	14800	8·4	
,, 27	14802	8·3	
June 3	14809	8·75	
,, 6	14812	8·8	
,, 9	14815	8·85	
,, 13	14819	9·05	
,, 15	14821	9·0	6.
,, 18	14824	9·25	
,, 24	14830	9·3	
,, 27	14833	9·6	
,, 30	14836	9·65	
July 10	14846	9·9	
,, 18	14854	10·3	
Aug. 7	14874	<11·5	
Sept. 1	14899	<11·5	
,, 19	14917	<10·5	
,, 24	14922	<10·8	
Oct. 6	14934	<10·6	

Date 1899.	Julian Day.	Mag.	Colour.
Oct. 22	2414950	< 9·9	
1900.			
Mar. 23	15102	8·95	6.
Apr. 16	15126	< 9·0	
May 3	15143	<10·5	
,, 20	15160	<12·0	
,, 21	15161	inv.	
,, 29	15169	<11·0	
June 8	15179	<10·5	
,, 20	15191	<11·0	
July 3	15204	<11·0	
,, 24	15225	<11·5	
Aug. 1	15233	<10·5	
Sept. 1	15264	<10·5	
,, 11	15274	<10·5	
,, 15	15278	Perhaps glimpsed, clear night.	
Oct. 7	15300	9·85	
,, 15	15308	9·6	
,, 20	15313	9·5	
Nov. 2	15326	9·0	
1901.			
Feb. 15	15431	9·8	
Apr. 1	5476	<10·0	

Date 1901.	Julian Day.	Mag.	Colour.
Apr. 24	2415499	<11·5	
May 5	5510	<10·6	
,, 15	5520	<10·7	
,, 22	5527	<12·0	
June 5	5541	<10·5	
,, 12	5548	<12·0	
July 8	5574	10·5	
,, 12	5578	10·4	
,, 20	5586	9·7	
,, 23	5589	9·6	
Aug. 8	5605	9·0	
,, 13	5610	8·8	
,, 15	5612	8·7	
,, 30	5627	8·3	
Sept. 3	5631	8·0	
,, 6	5634	8·3	6.
,, 9	5637	8·2	
,, 14	5642	8·1	
,, 17	5645	8·2	
,, 20	5648	8·3	
,, 21	5649	8·5	
,, 24	5652	8·4	
,, 30	5658	8·5	
Oct. 5	5663	8·5	
,, 12	5670	8·5	

This star is invisible in the 7-inch for so long a portion of its period, that it would not serve any useful purpose to plot the observations.

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From the observations the following maxima may be inferred :—

Magnitude.	Date.
9·0 V.	Julian Day 2396565 ± 4^d
8·5 V.	2409711 ± 20
9·2 P.	10933 ± 20
8·45 V.	14496 ± 5
8·0 V.	14778 ± 5
8·0 V.	15631 ± 5

The visual observations made here, are excellently satisfied by a period of 284·6 days, but the only period which will suit all the observations is 13 days greater. We subjoin a comparison where the maxima are computed from :—

J.D. 2415070 + 298^d E.

Calculation.	O.—C.
J.D. 2396594	−29^d
2409706	+ 5
10898	+35
14474	+22
14772	+ 6
15666	−35

It might be pointed out that 4557 S Ursæ Majoris with a period of 226 days has a periodic inequality of 43 days.

6050. R S SCORPII.

C.Z. XVI., No. 3302. C.G.A., No. 22855. C.P.D. −44°, No. 8106.

	R.A.	Dec.
1875.	16^h 46^m 33^s·8	−44° 53′·7.
1900.	**16 48 22·3**	**−44 56·4.**

The observations of position of this star are :—

Authority.	Epoch.	1875. R.A.	Dec.	Obs.
C.Z. XVI., No. 3302.	1873·4	16^h 46^m 33^s·94	−44° 53′ 42″·6	1
C.G.A., No. 22855.	1878·7	33 ·77	43 ·7	2
	1880·6	33 ·78	45 ·1	2
C.P.D. −44°, No. 8106.	1890·8	32 ·5	48	
Cor. DM. −44°, No. 11274.	1894·5	33 ·9	48	

These positions indicate a small proper motion, but further observations are required.

The discovery of the variability of this star is narrated by Mrs M. Fleming in the *Astr. Nach.*, No. 2997, of 1890 Oct. 13, as follows :—

"An examination of the photographs of stellar spectra taken by Mr S. J. Bailey, near Chosica, in Peru, and lately received at the Harvard College Observatory, has led to the discovery of a new variable star in the constellation Scorpius. On plate 4940 the hydrogen lines G and *h* are bright in the spectrum of the star Cord.

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G.C. 22855, magn. 7, whose approximate place for 1900 is in R.A. $16^h\ 48^m{\cdot}4$ Decl. $-44°\ 57'$. This star was therefore suspected of variability and the photographic charts of this region were at once examined and measured."

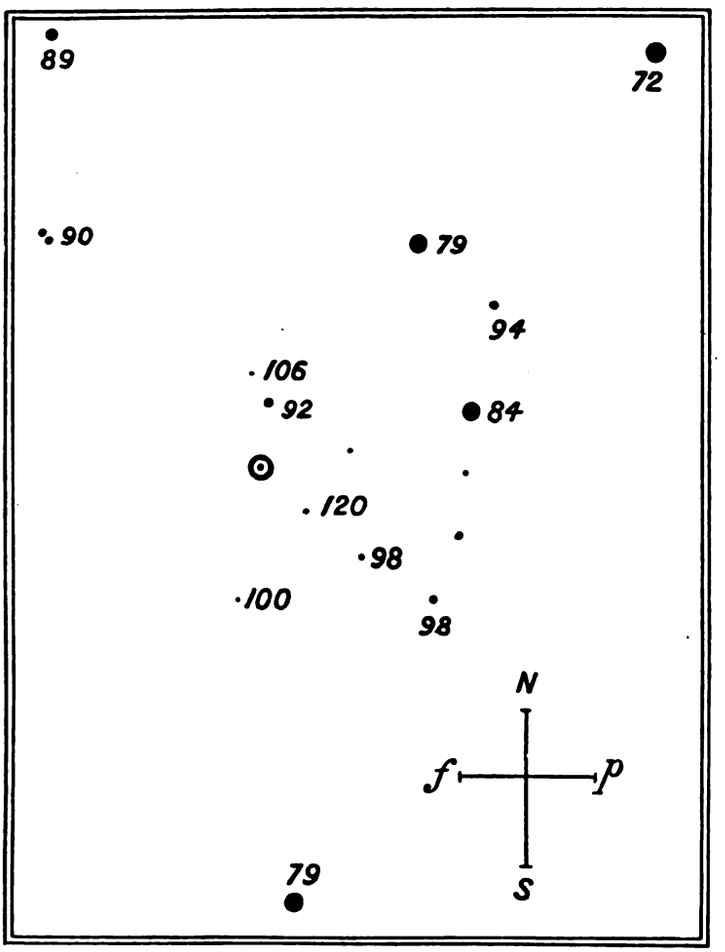
The magnitudes thus found are :—

	Julian Day.	Mag.
1889, June 13	2411167	9·0
,, ,, ,,	,,	9·4
,, ,, 21	175	[9·9]
,, ,, 24	178	< 8·5

	Julian Day.	Mag.
1889, July 13	2411197	10·1
,, Aug. 22	237	11·4
1890, Apr. 12	470	< 8·2

The star was independently found to be variable by Professor W. W. Campbell (see *Astr. Journ.*, No. 329, 1894, Sept. 8), who gives the following observations made with a 4-in. telescope.

	Julian Day.	Mag.
1893, June 8	2412623	<9·5
,, ,, 9	624	,,
,, ,, 27	642	,,
1894, ,, 22	13002	7·0



NOTE.—The magnitudes on the map have been multiplied by 10.
The crossbars are :—From N. to S. = 5′ in Dec. From p to $f = 24^{secs.}$ in R.A.

The Cordoba observations are as follows :—

	Julian Day.	Mag.
1873, June 17	2405327	7·0
1878, Sept. 4	07232	(7·0 ?)
,, ,, 5	07233	(,, ?)
1880, Aug. 6	07934	(,, ?)

	Julian Day.	Mag.	
1880, Aug. 16	2407944	...	
1894, June 22	13002	7·3	colour.
,, July 2	13012	7·5	
1898, May 11	14421	7·5	

The Cape Photographic observations are —

			Mag.
C.P.D. plate.	1890, Oct. 25	J.D. 2411666	9·5
C. du C. ,,	No. 597.		<9·7
,, ,,	,, 1734.		9·2

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A reference to the Cape visual observations is made in the *Astr. Journ.*, No. 442 of 1898, Aug. 22. The observations made here are:—

Date. 1897.	Julian Day.	Mag.	Colour.
July 27	2414133	faint	
,, 28	4134	doubtful if seen.	
,, 29	4135	10·4	
Aug. 31	4168	inv.	
Sept. 25	4193	12·0	
Oct. 19	4217	inv.	
,, 23	4221	inv.	
1898.			
May 16	4426	9·1	
,, 30	4440	9·8	
June 22	4463	10·1	
July 20	4491	inv.	
Aug. 19	4521	inv.	
Sept. 24	4557	inv.	
Oct. 17	4580	10·0	
,, 24	4587	9·9	
Nov. 12	4606	8·85	
1899.			
Apr. 23	4768	9·85	
May 11	4786	9·9	
June 9	4815	inv.	
July 1	4837	<11	
Aug. 8	4875	9·9	
,, 14	4881	9·8	very red.
,, 16	4883	9·7	

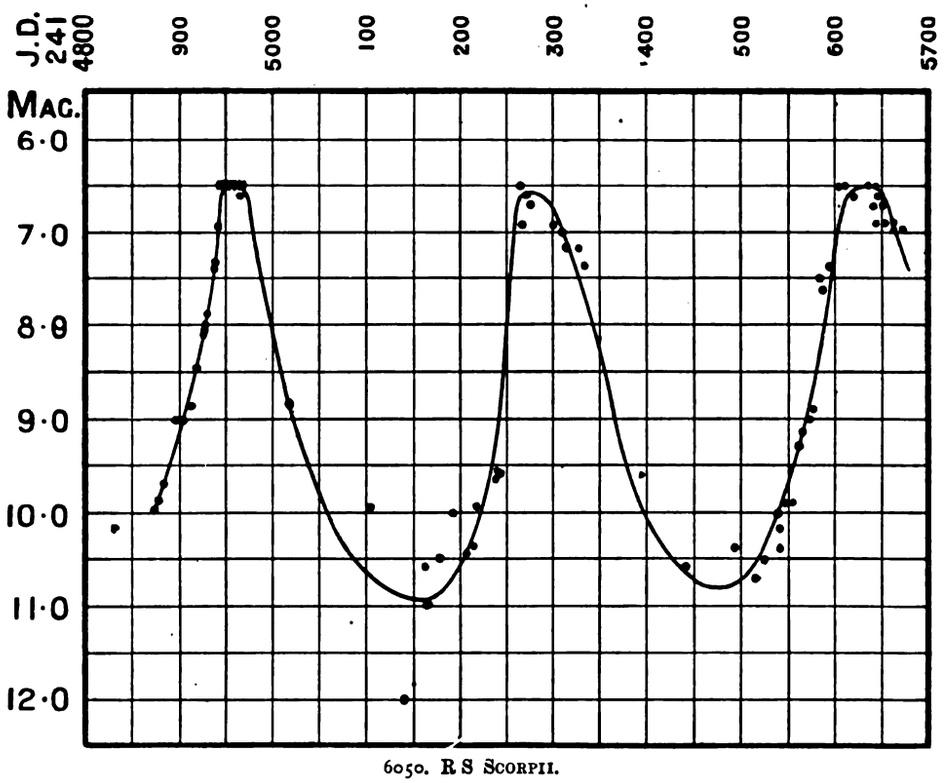
Date. 1899.	Julian Day.	Mag.	Colour.
Aug. 31	2414898	9·0	
Sept. 5	4903	9·0	7·5
,, 12	4910	8·8	7·5
,, 16	4914	8·4	7
,, 19	4917	8·15	7
,, 24	4922	8·1	
,, 25	4923	8·0	7·5
,, 27	4925	7·8	6
Oct. 4	4932	7·35	7
,, 6	4934	7·3	6
,, 10	4938	6·9	7
,, 13	4941	6·5	
,, 14	4942	6·5	7
,, 18	4946	6·5	
,, 22	4950	6·5	
,, 25	4953	6·5	6·5
,, 27	4955	6·5	
,, 29	4957	6·5	
Nov. 5	4964	6·6	6
,, 7	4966	6·5	
1900.			
Jan. 1	5021	8·8	7
Mar. 23	5102	9·9	
May 3	5143	12·0	
,, 21	5161	10·6	

Date. 1900.	Julian Day.	Mag.	Colour.
May 29	2415169	11·0	
June 8	5179	10·5	
,, 20	5191	10·0	
July 3	5204	10·4	
,, 6	5207	10·3	
,, 24	5215	9·9	
Aug. 1	5233	9·7	
,, 3	5235	9·6	
,, 7	5239	9·65	
Sept. 1	5264	6·8	6
,, 7	5270	6·5	4
,, 11	5274	6·6	
,, 17	5280	6·7	6
Oct. 7	5300	6·9	6
,, 15	5308	7·0	
,, 20	5313	7·2	
Nov. 2	5326	7·2	6
,, 6	5330	7·4	
1901.			
Feb. 15	5431	10·6	
Apr. 1	5476	<10·6	
,, 24	5499	10·3	
May 15	5520	10·7	
,, 22	5527	10·5	
,, 27	5532	10·4	

Date. 1901.	Julian Day.	Mag.	Colour.
June 2	245538	10·0	
,, 8	5544	10·2	
,, 12	5548	9·9	
,, 15	5551	9·9	
,, 25	5561	9·25	8
,, 29	5565	9·1	8
July 8	5574	9·0	
,, 10	5576	8·9	
,, 20	5586	7·5	
,, 23	5589	7·6	8
,, 27	5593	6·9	
Aug. 8	5605	6·5	7
,, 13	5610	6·5	
,, 15	5613	6·6	
,, 30	5627	6·5	
Sept. 3	5631	6·5	6·5
,, 6	5634	6·7	
,, 14	5642	6·6	
,, 17	5645	6·8	
,, 21	5649	6·7	
,, 24	5652	6·8	
,, 30	5658	6·8	
Oct. 7	5665	6·9	
,, 12	5670	6·9	

The Cape observations made since August 1899 are plotted on the following diagram, which at once furnishes:—

Range of Magnitude from 6·5 to 11·0.
M—m. = 130^d±.



6050. R S SCORPII.

It is not possible to make much use of the older observations in determining the mean period of this variable. A comparison between the Cape observations in 1898, May, and the observation taken at Cordoba on 1898, May 11, will show that it is exceedingly probable that the latter is erroneous.

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An assumed maximum on J. D. 2415270 with a period of

331·7 days

thus represents the better determined maxima :—

	Julian Day. Observation.	Computed.	O.—C.
Cordoba 1873	2405327	2405324	+3d
,, 1894—50d	12952	12953	—1
Cape 1899	14945	14943	+2
,, 1900	15270	15275	—5
,, 1901	15610	15607	+3

Colour :—

Magnitude.	Colour.	No. of Obs.
6·5—7·4	6·2	13
7·5—8·4	6·9	4
8·4 and fainter	7·7	6

A comparison with the elements given by Dr Roberts (*Astr. Journ.*, Nos. 491–492) is as follows :—

	Range of Mag.	M.—m.	Maxima.
Roberts :—	6·0/7·6 to 12·0 ?	160d ?	J. D. 2415339+332d·0
Cape :—	6·5 to 11·0/ <12·0	130 ?	2415270+331 ·7

Dr Roberts's epoch of maxima is no less than 69 days later than that deduced from the Cape observations, but he has since kindly communicated the following figures as an improvement on the above :—J. D. 2415290 + 325d.

The Cape period 331d·7, differs by 0d·1 from the mean period of *o* Ceti, viz. 331d·6. Compare also 2266 V Monocerotis 332d·0; 2684 S Canis Minoris 330d·3, and many others.

6053. S S SCORPII.

Cor. DM. – 32° No. 12146. C.P.D. – 32° No. 4275.

	R.A.	Dec.
1875.	16h 47m 10s	– 32° 25′·3.
1900.	**16 48 47**	**– 32 27·9.**

This star occurs in the list of "Suspected Variable Stars" on page xii. of Vol. II. of the Cordoba Durchmusterung. Reference to it also occurs in the *Astr. Journ.*, No. 425 of 1898, Jan. 22.

The observations found are :—

Authority.	Date.	Julian Day.	Mag.
Washington Zones	1846, June 18	2395466	8·0
C.P.D. plate	1888, July 25	2410844	8·7
Cordoba DM.	1889, May 6	11129	7·5
,, ,,	,, ,, 26	11149	9·0
,, ,,	,, June 23	11177	9·5
,, ,,	1893, Aug. 26	12702	7·75

The Cape observations are :—

Date.	Julian Day.	Mag.	Colour.
1896, Aug. 16	2413788	7·5	orange
,, ,, 22	3792	7·8	,,
,, ,, 28	3798	7·7	
,, Sept. 2	3805	7·6	orange
,, ,, 15	3818	8·0	
,, ,, 23	3826	(7·8)	
,, Oct. 6	3839	8·5	
1896, Oct. 20	2413853	8·5	
1897, July 1	4107	8·0	orange
,, Aug. 13	4150	8·0	,,
,, Sept. 5	4173	8·5	7·5
,, ,, 17	4185	8·0	
,, Oct. 20	4218	8·8	8
1898, May 26	4436	7·5	yellow

The star is not very well suited for observation with the 7-inch refractor on account of the lack of suitable comparison stars.

Range :— 7·5m to 9·5m
Colour :— 7·7
Period :— Unknown.

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6062. R R SCORPII.

O.A. 16121. Yarnall$_3$ 7135. C.P.D.—30°, No. 4528.

	R.A.	Dec.
1875.	$16^h\ 48^m\ 40^s$	—30° 22′·6
1900.	**16 50 15**	**—30 25 ·2**

This star occurs in the list of stars suspected of variability by Dr Thome and published in Vol. I. of the Cord. DM. p. xliv.

It also appears as a "suspect" in Professor Kapteyn's list on page (93) of Vol. I. of the C.P.D.

The actual discovery of variability was published by Professor E. C. Pickering in the *Astr. Nachr.*, No. 3225 of 1894, April 19. It was found by Mrs Fleming in the course of her regular examination of the Draper Memorial photographs, through the presence of bright hydrogen lines in its photographic spectrum. The presence of bright lines in its spectrum had already been noted by Mr Luis Duncker at Arequipa. From an examination of 18 photographs Professor Pickering was able to publish the following elements:—

Range	$7^m{\cdot}3$ to $11^m{\cdot}6$
Maxima	1846 June 16 J.D. 2395464 + 278^d E.

Observations will be found as follows:—

				Observations.
Mr P. S. Yendell	*Astr. Journ.* No.	323	1894 July 24	1894 May 10—July 3
Dr A. W. Roberts	,,	349	1895 ,, 16	
Mr H. M. Paul	,,	357	1895 Oct. 29	1895 June 28—Sept. 21

The following old observations may be found useful.

Authority.	Date.	Julian Day.	Mag.
Washington	1846, July 1	2395479	8·0
,,	,, ,, 10	5488	8·0
,,	,, ,, 15	5493	8·0
,,	,, ,, 15	,,	8–9
,,	1847, Apr. 22	5774	9·0
,,	,, May 28	5810	9·0

Authority.	Date.	Julian Day.	Mag.
Washington	1847, June 17	2395830	not obs.
,,	,, ,, ,,	,,	,,
Argelander	1849, ,, 23	6567	6·0
Washington	1865, July 13	2431	6·5
,,	1869, ,, 21	240	obs. but no mag. recorded

The period can hardly exceed 280 days.

The determinations of the position of this star are

Authority.	Epoch.	No. of obs.	R.A.	Epoch.	No. of obs.	Dec.
Washington Zones	1846·9	6	$16^h\ 48^m\ 40^s{\cdot}03$	1846·9	6	—30° 22′ 43″·2
O.A. 16121	1849·5	1	39 ·81	1849·5	1	42 ·0
Yarnall$_3$ 37135	1868·8	3	39 ·48	1867·0	2	42 ·3
Cor. DM.—30° No. 13626	1887·5	...	40 ·3	1887·5	...	72 ·
C.P.D. —30° No. 4528	1888·7	...	40 ·2	1888·7	...	36 ·

Dr Roberts has recently published elements for the variation of this star in the *Astr. Journ.*, Nos. 491–492 of 1901 Feb. 16.

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6370. S V SCORPII.

C.P.D. —35°, No. 7270. In no other catalogue.

	R.A.	Dec.
1875.	$17^h\ 39^m\ 56^s$	—35° 39′
1900.	**17 41 37**	**—35 40**

This star, which is 1·0 secs. *f.* and 0′·5 N. of C.P.D. —35° No. 7267, is announced as variable in the *Astr. Journ.*, No. 464 of 1899, June 14. A rough period is given in No. 468 of the same journal (1899 Aug. 29).

Besides the Cape visual observations, the only observation published is :—

C.P.D. plate. 1890, Nov. 3. J.D. 2411675 9·5 mag.

The visual observations are :—

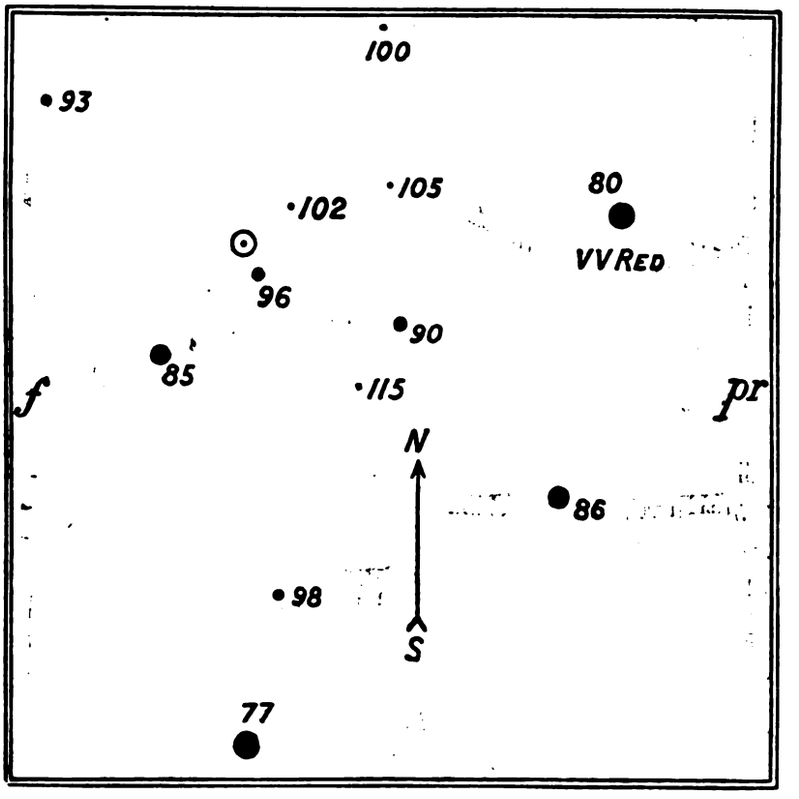
Date. 1898.	Julian Day.	Mag.
July 20	2414491	9·25
,, 25	496	9·2
Aug. 4	506	9·3
Sept. 5	538	9·5
,, 30	563	10·5
Oct. 7	570	10·5
,, 8	571	10·7
,, 12	575	10·6
,, 15	578	10·4
,, 17	580	10·4
,, 24	587	10·7
Nov. 12	606	inv.
1899.		
Apr. 23	768	9·1
May 3	778	9·0 red 6.
,, 11	786	9·2
,, 14	789	9·25
,, 19	794	9·25
,, 27	802	9·6
June 3	809	9·8

Date. 1899.	Julian Day.	Mag.
June 6	2414812	9·95
,, 9	815	10·2
,, 13	819	10·1
,, 15	821	10·6
,, 18	824	11·0
,, 24	830	<10·8
,, 30	836	11·6
July 12	848	<11·7
,, 26	862	inv.
Aug. 8	875	<11·5
,, 14	881	<11·
Sept. 2	900	<11·5
,, 19	917	<10·5
,, 23	921	10·6
,, 26	924	10·4
,, 27	925	10·3
Oct. 1	929	10·3
,, 4	932	10·3
,, 6	934	9·9

Date. 1899.	Julian Day.	Mag
Oct. 10	2414938	9·75
,, 14	942	9·75
,, 18	946	9·4
,, 22	950	9·3
,, 25	953	9·3
Nov. 3	962	9·2
,, 7	966	9·1
,, 10	969	9·0
,, 17	976	[8·9]
,, 23	982	8·95 good.
1900.		
Mar. 23	15102	<11·5
May 3	143	<10·5
,, 21	161	<11·5
,, 29	169	<11·2
June 8	179	10·7 ?
,, 20	191	10·4
,, 25	196	10·6
July 3	204	10·4

Date. 1899.	Julian Day.	Mag.
July 6	2415207	10·25
,, 24	225	9·6
Aug. 1	233	9·4
,, 3	235	9·2
,, 4	236	9·35
,, 7	239	9·25
,, 14	246	9·15
,, 18	250	9·1
Sept. 1	264	8·85
,, 2	265	8·8 c. 6.
,, 7	270	8·8 ,, 5.
,, 11	274	8·85
,, 13	276	8·8
,, 18	281	8·9
Oct. 7	300	9·5
,, 15	308	9·8
,, 20	313	10·0
Nov. 2	326	11·3
,, 19	343	<9·6

The neighbourhood of this variable star is indicated on the map.



NOTE.—The magnitudes of the stars have been multiplied by 10.
The scale can be found by noting that the variable star is 10′ in arc from the very very red star preceding it. This map has been made at the telescope.

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Maxima, as indicated by observation and as derived from the formula

J.D. 2415265 + 257^d E.

compare as follows :—

Observation.	Calculation.	O.—C.
J. D. 2411675	J. D. 2411667	+ 8
4490	4494	− 4
4777	4751	+26
4990	5008	−18
5265	5265	0

A comparison with Dr Roberts's elements (A. J. No. 491–2) is as follows :—

	Range.	Colour.	Maxima.
Roberts :—	$9^{\cdot}0^m$ to $<11^{\cdot}4^m$		J.D. 2415251 + 245^d E.
Cape :—	$\frac{8^{\cdot}8}{9^{\cdot}0}$ to $<11^{\cdot}6$	6	5265 + 257

Dr Roberts kindly communicates later elements as follows :—

Max. = J.D. 2415260 + 250^d E.

The very red star preceding 6370 S V Scorpii (see map), R.A. $17^h\ 40^m{\cdot}8$, Dec. —35° 40′ (1900) is in the list of photographic variable stars contained in the Harvard Circular, No. 54.: It is needless to say that this star has often been observed here as it affords a ready means of identifying the neighbouring field. In both the C.Z. (2 obs.) and the Cor. DM. it is called $8^m{\cdot}0$, with "color" added in the latter. In the C.P.D. it is $9^m{\cdot}6$. The writer has not observed any striking change in its visual magnitude, but a range of 0·3 or 0·4 magnitudes would probably have escaped notice.

6429. S ARÆ.

C.P.D.—49° No. 10361. In no other catalogue.

	R.A.	Dec.
1875.	$17^h\ 49^m\ 31^s{\cdot}6$	—49° 24′·9.
1900.	**17 51 27·3**	**—49 25·3.**

Professor Kapteyn refers to this star on page (94) of the 1st Vol. of the C.P.D., where he remarks :— "The variability . . . . is all but proved by the Cape *Carte du Ciel* plates."

My visual observations in 1898 proved the variability of the star, but it was not until the following year that the shortness of its period was appreciated. In 1899 I forwarded a paper on this star to the *Astr. Journ.*, but it has not yet appeared.* At the same time I asked Dr A. W. Roberts if he would be good enough to examine this star. With his usual great kindness he at once did so. The result will be found in the *Astr. Journ.* No. 477 of 1899, Nov. 10. For some time I considered the period of this star to be $7^h\ 28^m$, which Dr Roberts at first confirmed—see also Sir David Gill's Annual Report for 1899, page 11—but later on Dr Roberts arrived at a period of about $10^h\ 50^m\ 45^s$.† It is remarkable that my observations in 1899 suit either period within reasonable errors of observation—probably because the star was only observed as a rule in the early hours of the night. Later observations here fully confirm Dr Roberts's period.

* Since published in No. 487 of 1900, Dec. 13.
† Dr Roberts's paper has since been published in the Mon. Not. *R.A.S.* Vol. LXI. No. 3, Jan. 1901.

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The observations made here are divided into two parts—*viz.* (*a*) the photographic and those visual observations where the time of observation was not recorded; (*b*) those visual observations where the time was recorded.

The first series are of little use, but it seems well not to suppress them.

Series (*a*)

		Mag.
C.P.D. plate	1888, July 28	< 9·4
,,	,, ,, ,,	< 9·0
,,	,, Oct. 22	9·8
,,	,, ,, ,,	< 9·6
,,	,, ,, 25	< 9·4
,,	1890, July 10	10·2
Visual	1898, May 16	9·6
,,	,, ,, 26	9·6
,,	,, June 6	9·2
,,	,, July 11	9·8
,,	,, ,, 18	9·5
,,	,, ,, 25	9·4
,,	,, Aug. 4	9·3
,,	,, ,, 12	9·4
,,	,, Oct. 17	9·0
,,	1899, May 27	9·5
,,	,, June 9	9·1
,,	,, ,, 15	9·6
,,	,, ,, 18	9·5
,,	,, ,, 19	9·4
,,	,, ,, 24	9·55

		Mag.	
C.P.D. plate	1890, July 11	9·2	
Carte du Ciel plate No. 1802	1893, ,, 15	9·5	
,, 1981	,, Aug. 15	9·5	
,, 2864	1894, June 14	9·6	
,, 2885	,, ,, 16	9·3	
,, 4329	1896, July 23	9·6	
Visual.	1899, June 26	9·45	
,,	,, ,, 30	9·6	
,,	,, July 1	9·8	
,,	,, ,, 5	9·7	
,,	,, ,, 12	9·0	
,,	,, ,, 17	9·2	
,,	,, ,, 18	9·6	
,,	,, ,, 29	9·75±	
,,	,, ,, 30	9·2	
,,	,, Aug. 7	9·7	
,,	,, ,, 9	9·25	
,,	,, ,, 10	9·3	
,,	,, ,, 14	9·0	C.M.T. $6\frac{1}{2}^h\pm$
,,	,, Sept. 5	9·1	
,,	,, ,, 6	9·0	

Observations taken to the nearest minute, reduced to the Sun :—

Series (*b*).

1899.	Julian Day.	Cape M. Time. (Heliocentric.)	Mag.
July 18	2414854	$8^h\ 57^m$	9·5
,, 19	4855	7 35	9·65
,, 22	4858	7 31	9·4
,, 26	4862	6 26	9·1
,, 27	4863	6 18	9·4
,, 28	4864	5 46	9·75
Aug. 4	4871	8 19	9·0
,, 16	4883	9 49	9·6
,, 17	4884	6 34	9·75
,, 31	4898	11 46	9·3
Sept. 1	4899	7 25	9·4
,, 2	4900	6 59	9·2
,, ,,	,,	8 31	9·3
,, 12	4910	7 10	9·45
,, ,,	,,	8 37	9·6
,, 16	4914	7 27	9·1
,, 17	4915	10 18	9·65
,, 18	4916	9 53	9·55
,, 19	4917	6 34	9·6
,, ,,	,,	7 14	9·65
,, ,,	,,	8 13	9·6
,, 20	4918	9 6	9·4
,, 23	4921	7 34	9·65
,, 24	4922	7 32	9·7
,, ,,	,,	8 17	9·65
,, 25	4923	6 55	9·0
,, ,,	,,	7 26	9·0
,, ,,	,,	9 56	9·4
,, ,,	,,	10 46	9·5
,, 26	4924	6 49	9·4
,, ,,	,,	7 17	9·4
,, ,,	,,	8 49	9·4
,, 27	4925	6 41	9·55
,, ,,	,,	7 23	9·5

1899.	Julian Day.	Cape M. Time. (Heliocentric.)	Mag.
Sept. 27	2414925	$8^h\ 12^m$	9·65
,, 28	4926	6 52	9·65
,, 30	4928	8 37	9·35
Oct. 1	4929	7 55	9·5
,, ,,	,,	8 28	9·5
,, 3	4931	8 5	9·75
,, ,,	,,	9 13	9·7
,, ,,	,,	9 46	9·55
,, ,,	,,	9 49	9·3
,, ,,	,,	9 51	9·2
,, ,,	,,	9 53	9·1
,, ,,	,,	9 57	9·0
,, ,,	,,	10 3	9·05
,, ,,	,,	10 11	9·0
,, ,,	,,	10 19	8·9
,, ,,	,,	10 25	8·9
,, ,,	,,	10 32	8·9
,, ,,	,,	10 44	8·95
,, ,,	,,	10 53	9·1
,, ,,	,,	11 6	8·9
,, ,,	,,	11 20	9·1
,, ,,	,,	11 22	9·2
,, ,,	,,	11 29	9·25
,, ,,	,,	11 35	9·3 low.
,, ,,	,,	11 41	9·3 ,,
,, ,,	,,	6 46	9·3 low.
,, 6	4934	6 49	9·5 twi.
,, ,,	,,	7 11	9·6
,, ,,	,,	7 28	9·65
,, ,,	,,	7 56	9·65
,, 10	4938	7 0	9·3
,, ,,	,,	7 9	9·4
,, ,,	,,	7 21	9·35
,, ,,	,,	7 43	9·45

1899.	Julian Day.	Cape M. Time. (Heliocentric.)	Mag.	
Oct. 10	2414938	$8^h\ 12^m$	9·45	
,, ,,	,,	8 31	9·5	
,, ,,	,,	8 47	9·6	
,, ,,	,,	9 5	9·6	gd.
,, ,,	,,	9 15	9·55	
,, 13	4941	9 46	9·2	
,, ,,	,,	10 2	9·25	
,, ,,	,,	10 18	9·35	
,, 14	4942	6 53	9·0	
,, ,,	,,	8 1	9·25	
,, ,,	,,	8 11	9·25	
,, ,,	,,	8 23	9·4	
,, 18	4946	6 54	9·65	twi.
,, ,,	,,	7 8	9·6	
,, ,,	,,	7 31	9·4	
,, ,,	,,	7 36	9·3	
,, ,,	,,	7 39	9·3	
,, ,,	,,	7 44	9·25	
,, ,,	,,	7 55	9·15	
,, ,,	,,	8 2	9·05	
,, ,,	,,	8 16	9·0	
,, 22	4950	7 4	9·67	
,, ,,	,,	7 12	9·7	
,, ,,	,,	7 34	9·65	
,, ,,	,,	7 51	9·7	
,, ,,	,,	8 13	9·7	
,, 24	4952	6 58	9·35	
,, ,,	,,	7 12	9·4	
,, ,,	,,	7 51	9·4	
,, ,,	,,	8 12	9·5	
1900.				
July 6	5207	9 25	9·75	
,, 24	5225	6 52	9·55	
,, ,,	,,	7 39	9·6	

1900.	Julian Day.	Cape M. Time. (Heliocentric.)	Mag.	
July 25	2415226	$6^h\ 16^m$	9·6	
Aug. 1	5233	6 52	8·95	
,, ,,	,,	7 47	9·0	
,, ,,	,,	7 56	9·0	
,, ,,	,,	9 9	9·3	gd.
,, 3	5235	6 50	9·6	
,, 4	5236	7 21	9·8	
,, ,,	,,	7 36	9·75	
,, ,,	,,	7 56	9·65	
,, ,,	,,	8 26	9·65	
,, ,,	,,	9 3	9·65	
,, 7	5239	6 38	9·3	
,, ,,	,,	6 49	9·3	
,, 8	5240	6 21	9·75	
,, ,,	,,	6 45	9·65	
,, ,,	,,	6 53	9·7	
Sept. 15	5278	6 45	9·65	
,, ,,	,,	7 23	9·67	
,, ,,	,,	8 0	9·65	
,, ,,	,,	8 38	9·67	
,, 17	5280	7 50	9·2	
,, ,,	,,	9 42	9·45	
,, 18	5281	7 16	9·3	
,, ,,	,,	7 56	9·5	
,, ,,	,,	8 53	9·6	
Oct. 15	5308	7 15	8·95	
,, ,,	,,	7 17	9·0	
,, ,,	,,	7 45	9·05	
,, ,,	,,	8 1	9·2	
,, 17	5310	7 17	9·65	
,, 20	5313	7 34	9·25	
,, ,,	,,	7 47	9·3	
,, ,,	,,	8 19	9·45	

LIGHT EQUATION TABLE FOR S ARÆ.

To reduce to Heliocentric Time :—Correct the observed times by the following table.

Date.	Correction.	Date.	Correction.
	m		m
14 February	− 4·1	15 July	+ 6·8
1 March	− 2·3	1 August	+ 5·7
15 ,,	− 0·5	15 ,,	+ 5·4
1 April	+ 1·8	1 September	+ 2·5
15 ,,	+ 3·3	15 ,,	+ 0·8
1 May	+ 5·0	1 October	− 1·2
15 ,,	+ 6·2	15 ,,	− 2·9
1 June	+ 7·1	1 November	− 4·8
15 ,,	+ 7·4	15 ,,	− 6·0
1 July	+ 7·3		

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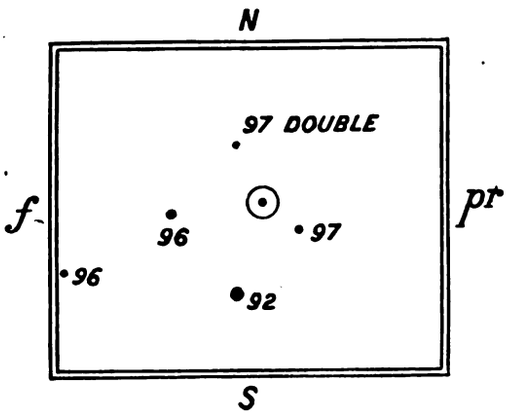
The comparison stars used here will be found on the map.



NOTE.—The magnitudes on the map are multiplied by 10.
The map is $1^{min.}$ $12^{secs.}$ in R.A. and 10′ in dec.
There is a star 12 or 13 mag. near the variable star.

A period of $10^h\ 50^m\ 43^s{\cdot}35$ was now assumed, and with it all the observations were brought to 1900, Jan. 1 C.M.T. $0^h\ 0^m$ to $11^h\ 0^m$. These are plotted on the diagram on the next page and from it the following data have been derived :—

Maximum :—	1900, Jan. 1	C.M.T. $8^h\ 35^m$ (Heliocentric).
Range of Mag. :—		8·9 to 9·7
Stationary at minimum for about 3½ hours.		
M—m.		$1^h\ 36^m$.

From Dr Roberts's curve, which he kindly forwarded, containing his observations brought up to the same epoch with a period of $10^h\ 50^m\ 45^s$, we derive

Maximum :—	1900, Jan. 1	C.M.T. $8^h\ 50^m$.
Range of Mag. :—		9·45 to 10·84.
M—m.		$2^h\ 20^m$.

It is evident that the scale of magnitudes used by Dr Roberts for his comparison stars is about 0·90 mags. fainter than that used here.

From the C.P.D. Vol. II., we learn that the plate of 1890, July 11 was exposed at an hour angle of $-2^h\ 58^m$ for 45^m. This gives

J.D. 2411560 C.M.T. $7^h\ 45^m$.

and the means of the epoch of 1900, Jan. 1 can be taken as

J.D. 2415021 C.M.T. $8^h\ 45^m$.

an interval of

3461 days 1 hour.

We can assume that the periods were either

	7660	Resulting period = $10^h\ 50^m\ 38^s{\cdot}4$.
	7659	,, $10\ 50\ 43^s{\cdot}5$.
or	7658	,, $10\ 50\ 48^s{\cdot}6$.

The only allowable number is 7659 and the period resulting =

$10^h\ 50^m\ 43^s{\cdot}5$,

can hardly be in error by $0^s{\cdot}5$.

P.S.—See also Dr Roberts's elements in the *Astr. Journ.*, Nos. 491–492, and his later paper in the *M. N. R. A. S.*, vol. lxi. p. 163.

The magnitude curve of this star bears an extraordinary resemblance to that of 6685 Y Lyræ. See Mr A. Stanley Williams's paper in the *M. N. R. A. S.*, vol. lxii. No. 3.

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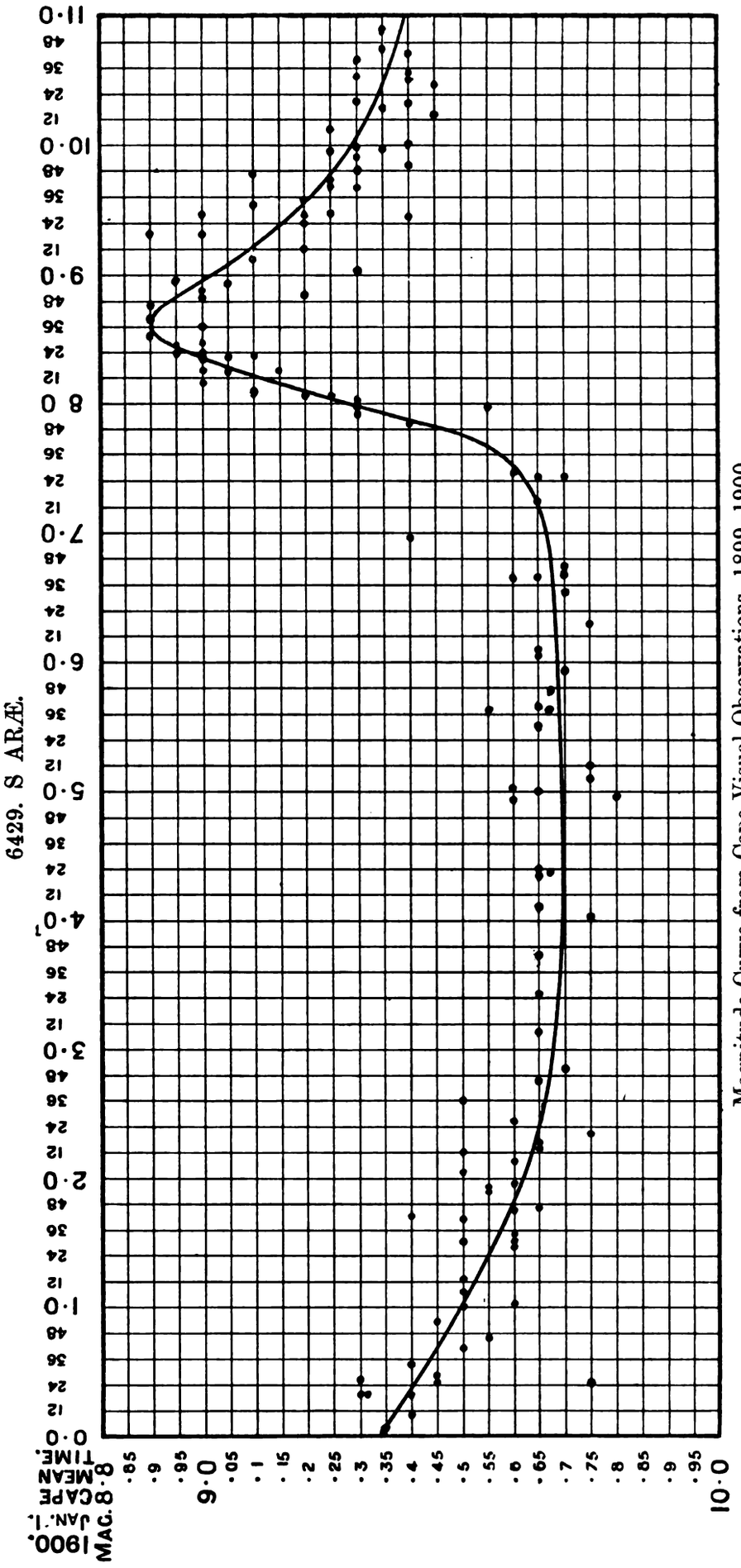

Magnitude Curve from Cape Visual Observations, 1899–1900.

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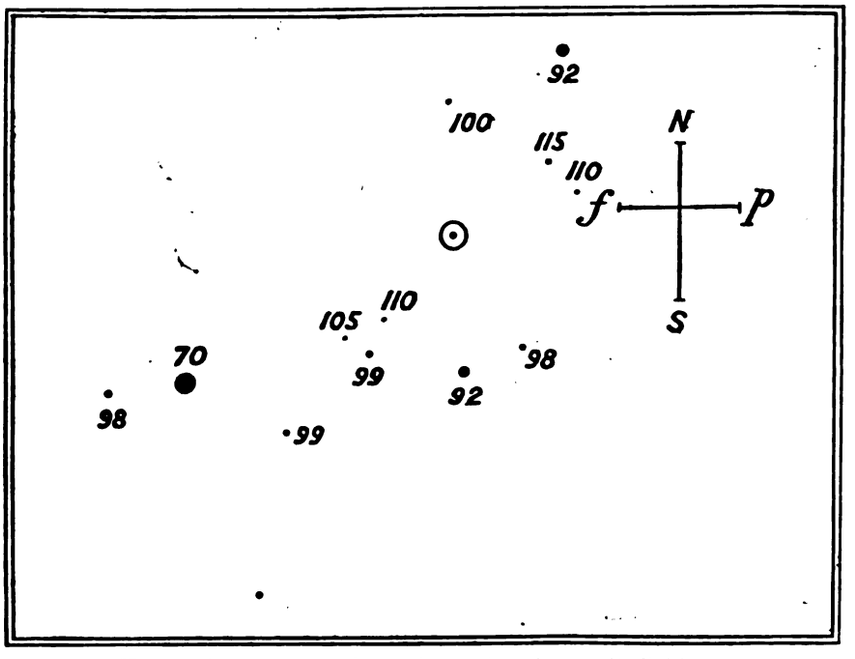
6500. R PAVONIS.

C.Z. XVIII. No. 56. C.G.A. No. 24674. C.P.D. — 63°, No. 4323.

	R.A.	Dec.
1875.	$18^h\ 0^m\ 52^s{\cdot}4$	$-63°\ 38'{\cdot}2$.
1900.	**18 3 16·6**	**—63 38·1.**

Mrs M. Fleming announced the variability of this star in No. 116 of *Astronomy and Astrophysics*, under date of 1893, May 10. This star has a spectrum similar to other known variables of long period, and an examination of the photographic charts of this region taken at Arequipa, resulted in the confirmation of its variability.



NOTE.—The star magnitudes on the map have been multiplied by 10.
The crossbars are :—From N. to S. = 5′ in Dec. From *p* to *f* = 40 secs. in R.A.

The magnitudes derived by Mrs Fleming are :—

	Julian Day.	Mag.
1889, Aug. 8	2411223	8·1
,, ,, 13	1228	8·1
,, ,, 20	1235	8·1
,, Sept. 4	1250	9·0
1891, June 12	2411896	7·6
,, ,, 12	,,	7·6
1892, Sept. 17	2359	7·9

The Cordoba magnitudes are :—

	Julian Day.	Mag.
1873, Aug. 12	2405383	9·5
1875, July 30	6100	7·5
1880, Sept. 4	7963	8
,, ,, 5	7964	8½
,, ,, 6	7965	8¾

From the C.P.D. we have :—

1885, Aug. 17	2409771	inv.
,, ,, 27	9781	,,
1889, June 4	11158	10·3
,, ,, 5	1159	10·3

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The Cape visual observations are :—

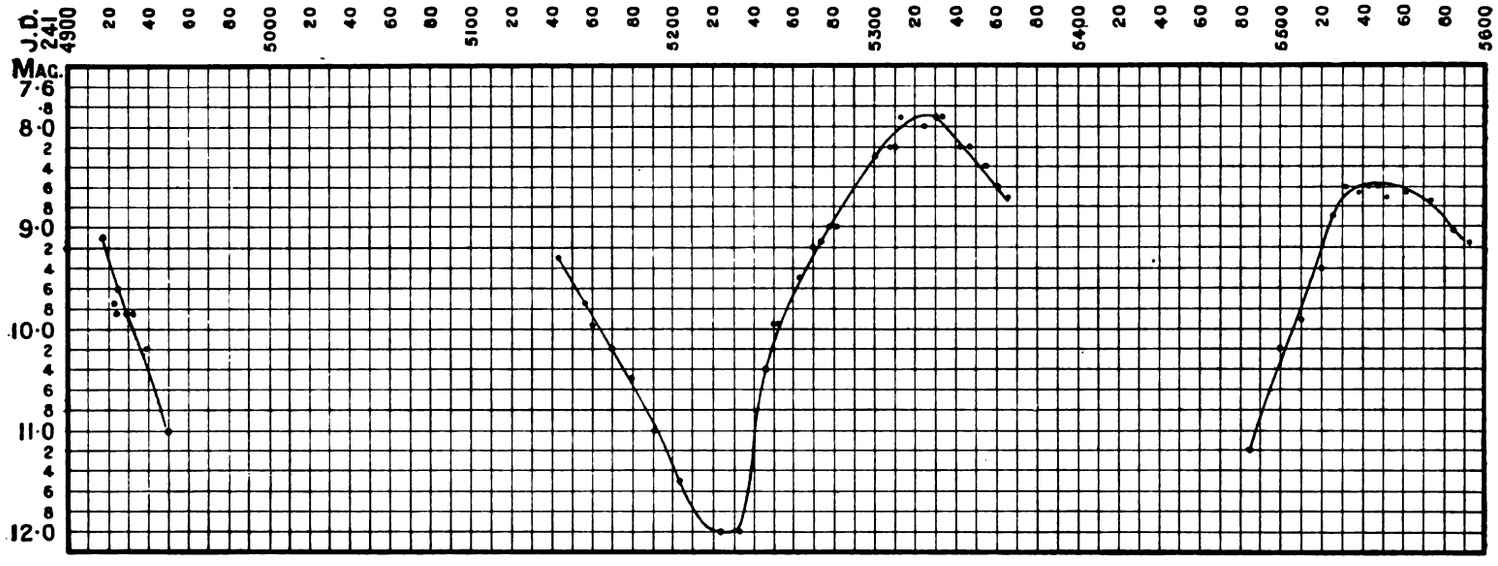
Date. 1899.	Julian Day.	Mag.
Sept. 19	2414917	9·1
,, 25	923	9·75
,, 26	924	9·85
,, 27	925	9·6
Oct. 1	929	9·85
,, 4	932	9·85 (red).
,, 10	938	10·2
,, 22	950	11·0
Nov. 3	962	<11·5
,, 10	969	<11·2
,, 23	982	< 9·9
,, 29	988	<10·5
1900.		
May 3	15143	9·3
,, 16	156	9·75

Date. 1900.	Julian Day.	Mag.
May 20	2414160	9·95
,, 29	169	10·2
June 8	179	10·5
,, 20	191	11·0
July 3	204	11·5
,, 24	225	12·0
Aug. 1	233	12·0
,, 14	246	10·4
,, 18	250	9·95
,, 20	252	9·95
Sept. 1	264	9·5
,, 7	270	9·2
,, 11	274	9·15
,, 15	278	9·0
,, 18	281	9·0

Date. 1900.	Julian Day.	Mag.
Oct. 7	2415300	8·3
,, 15	308	8·2
,, 17	310	8·2
,, 20	313	7·9
Nov. 1	325	8·0
,, 6	330	7·9
,, 9	333	7·9
,, 19	343	8·2
,, 23	347	8·2
Dec. 1	355	8·4
,, 7	361	8·6
,, 12	366	8·7
1901.		
Feb. 15	431	<11·8
Apr. 1	476	<10·6

Date. 1901.	Julian Day.	Mag.
Apr. 10	2415485	11·2
,, 24	499	10·2
May 5	510	9·9
,, 15	520	9·4
,, 22	527	8·9
,, 27	532	8·6
June 2	538	8·65
,, 8	544	8·6
,, 12	548	8·6
,, 15	551	8·7
,, 25	561	8·65
July 8	574	8·75
,, 20	586	9·05
,, 27	593	9·15

The Cape observations are plotted on the diagram.



To determine the period, the following maxima may be assumed :—

Mag.	Julian Day.	Interval.	Period.
7·5 V	2406100	1850^d ÷ (8)	231·2^d
8·0 V	7950	3273 (14 or 15)	233·8 or 218·2
8·1 P	11223	673 (3)	224·3
7·6 P	11896	463 (2)	231·5

Mag.	Julian Day.	Interval.	Period.
7·9 P	2412359	2961^d ÷ (13)	227·7^d
7·9 V	15320	216 (1)	216·0
8·6 V	15536		

Postulating

$$\text{Maxima} = \text{J.D. } 2415102 + 230^d{\cdot}1\ E.$$

we have

E.	Computed Date of Maximum.	O.—C.
−39	J. D. 2406108	− 8^d
−31	7969	−19
−19	11190	+33
−14	11881	+15

E.	Computed Date of Maximum.	O—C.
−12	J. D. 2412341	+18^d
+ 1	15332	−12
+ 2	15562	−26

The use of a sine-term would reduce the discordance O.—C., but its introduction is not yet justified by the material available.

$$M - m = 90^d\ ?$$

Range $7^m{\cdot}5 - 8^m{\cdot}6$ to $12^m{\cdot}0$.

A comparison with Dr Roberts's elements (*Astr. Journ.*, Nos. 491–2) is as follows :—

	Range.	M—m.	Maxima.
Roberts,	8·0^m to 11·7^m	109^d ?	J. D. 2415106 + 229^d E
Cape,	7·9—8·6 to 12·0	90 ?	2415102 + 230 ·1

Compare also

	Colour.	Range	M—m.	Period.
4557 S Ursæ Majoris	3·2	6·7–8·2^m to 10·2–11·5^m	113^d	226^d·1 + 43° sin θ
6921 S Sagittarii	0	9·1–10·4 to 14·5	110	230 ·6 + inequality

There are many variable stars with periods of about 230 days.

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6636. U SAGITTARII.

	R.A.	Dec.
1875.	$18^h\ 24^m\ 31^s{\cdot}5$	$-19°\ 12'{\cdot}6$.
1900.	**18 25 59·9**	**−19 11·7.**

This well-known short-period variable was only observed here on the few occasions on which a neighbouring star was being examined. The observations are :—

Date.	Julian Day.	Mag.	Colour.
1899, Sept. 20	2414918	8·0	6
,, ,, 25	14923	7·5	
,, ,, 27	14925	7·8	
,, Oct. 3	14931	7·9	
,, ,, 6	14934	7·7	
,, ,, 10	14938	7·7	
,, ,, 14	14942	7·0	3
1899, Oct. 18	2414946	7·9	6
,, ,, 22	14950	7·4	5
,, Nov. 3	14962	7·25	5
,, ,, 7	14966	7·8	
1900, May 21	15161	8·0	
,, July 6	15207	7·3	

The observations in 1899 yield a very good maximum on :—

1899, Oct. 7·3 J.D. 2414935·3

the period assumed being that given by Dr Chandler in the *Third Catalogue of Variable Stars*, viz., 6·7446 days.

Dr Chandler also gives as an epoch of maximum :—

1870, July 1 J.D. 2404245·0

anterior by 10690·3 days to the above maximum.

This, divided by 1585, gives $6^d{\cdot}74467$ as the period. Division by 1584 or 1586 gives roughly $6^d{\cdot}745 \pm 0^d{\cdot}004$, periods, which are evidently inadmissible.

M−m. = d 3·3		
Mag. 7·0–7·5 :—	Colour = 4·3	Dependent on too few observations to be of much weight.
,, 7·6–8·0	,, = 6·0	

6806. S CORONÆ AUSTRALIS.
6811. R ,, ,,
6812. T ,, ,,

	1875. R.A.	1875. Dec.	1900. R.A.	1900. Dec.
S	$18^h\ 52^m\ 45^s$	$-37°\ 7'{\cdot}2$.	$18^h\ 54^m\ 16^s$	$-37°\ 5'{\cdot}3$.
R	18 53 28	−37 7·5.	18 55 9	−37 5·6.
T	18 53 33	−37 8·3.	18 55 14	−37 6·4.

R. is C.P.D.−37° No. 8452, mag. 10·1 and Cor. DM.−37° No. 13027, mag. 9·7; it is also in the catalogues of nebulæ by Schmidt and Marth. Marth gives the following description in the *Mems. R. A. S.*, Vol. XXXVI. page 68 (1867) :—

* 13 *m.* with v F., neb. tail. 1864·50.

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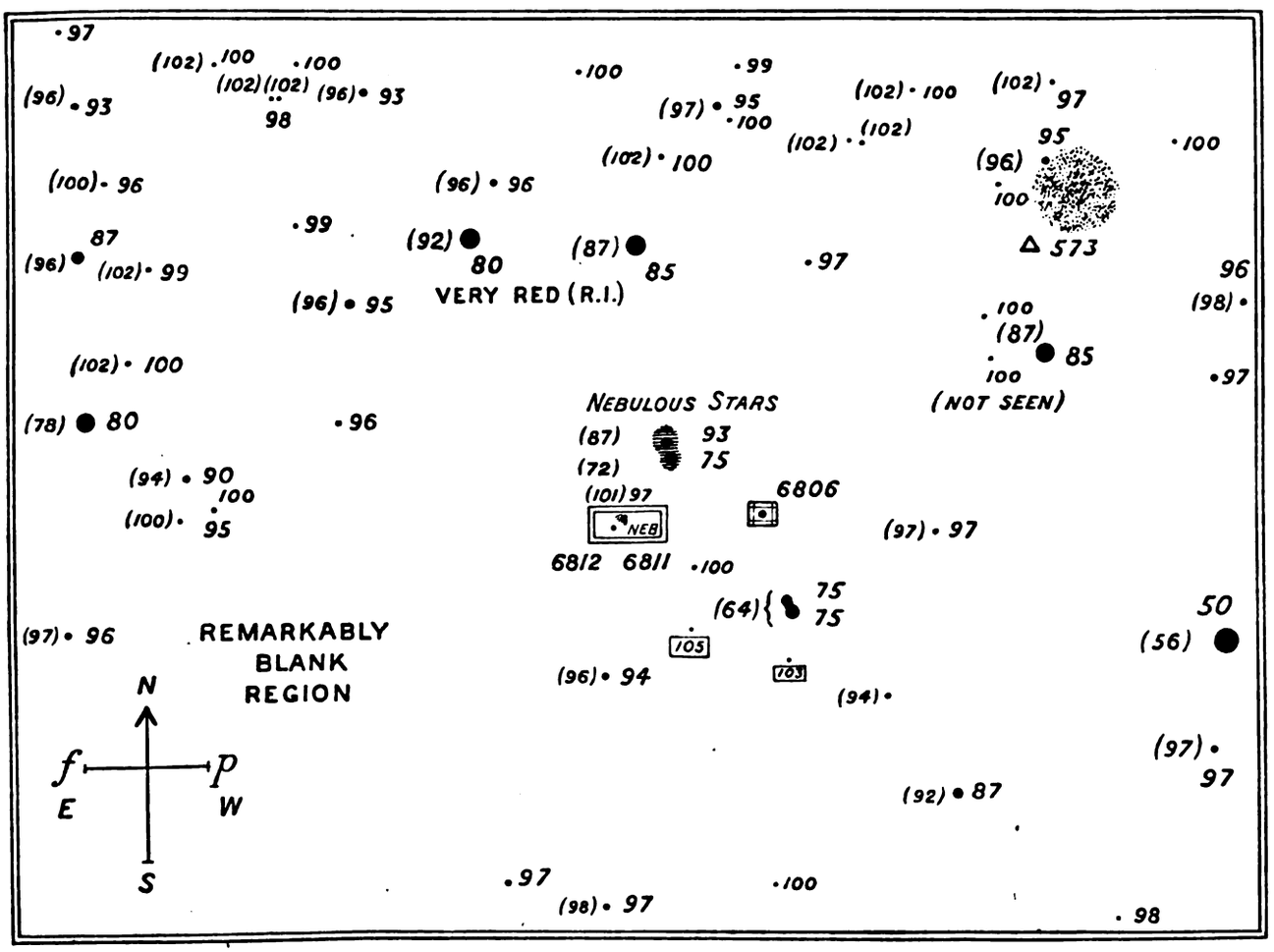
The variability of these three stars was discovered by Dr J. F. J. Schmidt of Athens, and his observations and remarks on them are scattered through many volumes of the *Astr. Nachr.* The region in which these stars is situated is a very remarkable one. A reference to the map shews that within a space of one quarter of a square degree there are :—



1875. Centre of Map. R.A. $18^h\ 54^m$ Dec. $-37°\ 5'$.
Scale :—N. to S. = 10′ in dec. p to f = $40^{secs.}$ in R.A.
All magnitudes have been multiplied by 10 to avoid the use of a star-like decimal point.
The mags. in brackets are taken from the C.P.D.
,, ,, ,, squares ,, of stars not found in the C.P.D. or in the Cordoba DM.
The remaining mags. are from the Cordoba DM.

(1) A large resolvable cluster (Dunlop 573).

(2) A bright double star (Ref. Cat. No. 97 in 18 hrs.)

(3) A nebulous double star, in which the nebular brightness is greater and the nebulous envelope larger around the lesser component.

(4) Three variable stars or two variable stars and a variable nebula.

South-east of these objects there is a curiously blank space in the sky forming a striking contrast.

The well-known binary star γ Coronæ Australis is closely following this region.

Dr Schmidt gives a history of his discoveries in this region in the *Astr. Nachr.*, No. 2106 of Sept. 30, 1876, wherein he tells us—

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(1) That he discovered the nebulosity around the two stars (marked "Nebulous Stars" on the map) in October 1860, and that he has had them under observation for sixteen years. (The writer independently came across these stars some years ago; their description will be found in the *Journ. of the Brit. Astr. Association*, Vol. VI. page 257.)

(2) That he found S Coronæ Australis to be variable in 6 days in 1866.

(3) That to the S.E. of S Cor. Austr. there is a faint elliptical nebula which is not contained in the Cape Catalogue (Sir John Herschel's) and which he found in 1861.

(4) That at the west edge of this nebula there is a variable star, varying from 11 mag. to inv. in about a month. This is R Coronæ Australis. Found in 1866.

(5) At the east end of the nebula he found in 1876 a star of the 14·7 mag. which is variable—T Coronæ Australis.

(6) That in 1876 July and August this last star appeared to be 11^m, whilst R Cor. Austr. was only about $13{\cdot}3^m$. In 1876, Sept. 6 and 9, R Cor. Austr. was decreasing in magnitude, but that both were measurable.

Schmidt gives measures of position of these different objects taken between 1861 and 1876. His places for the variable stars are :—

		R.A.	Dec.	
S	Coronæ Australis	$18^h\ 52^m\ 38^s{\cdot}5$	$-37°\ 8'\ 1''$	1865.
R	,, ,,	18 52 47·0	−37 8 20	
T	,, ,,	18 52 51·9	−37 9 5	

and for the difference of R.A. and Dec. of the lesser nebulous star from the brighter

$$\Delta\alpha = +2^s{\cdot}1 \qquad \Delta\delta = +52''$$

In a paper in the *Astr. Nachr.* (1884, Jan. 29) written but thirteen days before his death, Schmidt gives his most recent observations. He considers R Cor. Austr. to have a period of 30 or 31 days, but remarks that moonlight, insufficient optical power and the great southern declination of these objects, which can only rise 15° above his horizon, prevent continuity of observation.

As seen here with a 7-inch refractor, R and T Cor. Austr. seem to be placed at the two ends of the major axis of a faint elliptical nebula, which is brightest to R. With the 18-inch McClean refractor on 1900, Oct. 15, it was seen that the nebula does not extend to T Cor. Austr., and that it is fan-shaped thus—

agreeing very closely with Marth's description quoted above.

Schmidt suspected that this nebula is variable. This is so, but the Cape observations with the 7-inch are not full enough to answer all questions. The observations will be continued with the 18-inch refractor.

In the meantime the Cape observations give the following indications :—

(1) S Coronæ Australis is probably not variable.

(2) R ,, ,, is variable $9{\cdot}7^m$ to inv., and that the nebula to which it is attached also varies in brightness.

(3) T Coronæ Australis : the stellar nature of this object is somewhat doubtful as seen with the 7-inch, but in the 18-inch it is certainly star-like.

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The Cape observations are :—

1899.	Julian Day.	6806 S Mag.	6811 R Mag.	6812 T Mag.
June 11	2414817	10·4	10·5 in neb.	inv., neb. only.
,, 13	819	10·7	11·0	inv.
,, 15	821	10·3	11·0	,,
,, 30	836	11·0	?	,,
July 1	837	10·4	no star clearly seen here.	
,, 12	848	10·6	,, ,, ,, ,,	
,, 26	862	10·5	9·9 very good.	inv.
,, 27	863		9·8	
,, 28	864	10·7	9·7	
Aug. 4	871	11·0	9·95 good.	inv.
,, 10	877	10·7	10·7 ? not clearly seen except as nuc. to neb.	,,
,, 14	881	10·7	11±	,,
,, 31	898	10·5	11·0	perhaps neb. has a stellar nucleus.
Sept. 5	903	10·3	11 or less.	inv.
,, 25	923	10·2	10·5	11±
Oct. 3	931	10·2	10·1 stellar under a high power.	
,, 6	934	10·2	9·9 and neb. looks brighter as well.	
,, 10	938	10·5	10·5	

1899.	Julian Day.	6806 S Mag.	6811 R Mag.	6812 T Mag.
Oct. 14	2414942	10·5	11±	
,, 18	946	10·5	10·7	
,, 22	950		10·7	11·5
,, 25	953	10·3	ft.	ft.
Nov. 3	962	10·5	inv.	inv.
,, 7	966	10·6	<10·7	<10·7
,, 10	969	10·3	<10·7	<10·7
,, 23	982	<10	<10	<10
,, 29	988	<10	<10	<10
1900.				
May 20	15160	10·5	<10·8	<10·8
,, 31	171	10·25	10·5	11·0
July 24	225	10·7	10·8	
Aug. 1	233	10·5		
,, 14	246	10·3	11·0	
,, 18	250	10·3	10·3 good.	
,, 20	252	10·2	10·2 v. good.	
Sept. 18	281	10·5		
Oct. 15 (18 in.)	308		11±	11·5±
1901.				
July 24	590		11·0 neb. bright.	
Oct. 10 (18 in.)	668		10·5	11·5

In the *Astr. Journ.*, Nos. 491–492, Dr Roberts bears witness to the difficulty of securing good estimates of the magnitude of R Coronæ Australis. He considers its period to be 89·2 days.

6900b. R Y SAGITTARII.

Lacaille 8051. U.A. 156 Sagittarii. Cape 1880, No. 10452.

	R.A.	Dec.
1875.	$19^h\ 8^m\ 23^s{\cdot}0$	$-33°\ 44'{\cdot}3$.
1900.	**19 10 0·9**	**−33 41 ·8.**

The observations of position of this remarkable variable star are :—

Authority.	Epoch.	1875. R.A.	Epoch.	1875. Dec.	No. of Obs.
Lacaille 8051	1751±	$19^h\ 8^m\ 23^s{\cdot}0$	1751±	33° 44′ 33″·	1·1
Yarnall, 8368	1863·6	22 ·80	1869·5	19 ·6	4·5
C.Z. XIX. 365	73·1	22 ·75	73·1	17 ·4	1·1
C.G.A. 26384	74·7	22 ·96	74·7	20 ·1	6·6
Cape 1880. 10452	78·6	22 ·79	78·6	20 ·2	3·3
C.P.D.—33° No. 5553	88·8	23 ·6	88·8	24 ·	...
Cor. DM.—33° No. 14076	89±	23 ·1	89±	12 ·	...

This star was found to be variable by Colonel E. E. Markwick. The history of its discovery is given in the following words in the *Astr. Nach.*, No. 3362 of 1896, June 30, by Professor E. C. Pickering of the Harvard College Observatory :—

"The . . . . star —33°,14076, is a very remarkable object. It was one of a list of forty-two stars

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suspected of variability sent there for examination by Colonel E. E. Markwick of Gibraltar. A report was sent to him that an examination of several photographs failed to show any sign of variability. A few days later an object having a peculiar spectrum was discovered by Mrs Fleming. All the plates of the region were examined and its variability established. It was about to be published in *A.N.* 3347, when it was found to be identical with the star of Colonel Markwick. It was accordingly reported to him for announcement, but he has kindly authorized its publication here. . . . The spectrum of this star is peculiar and contains bright lines which show evidence of change."

Its variability was also independently (evidently) detected by Professor J. C. Kapteyn and announced in the *Astr. Nach.*, No. 3389 of 1896, Nov. 30. References to Cape observations are made in the *Astr. Journs.*, Nos. 425 and 468.

The old observations are as follows :—

		Julian Day.	Mag.
Lacaille	1751, ±		7·0
Washington Zones	1846, July 14	2395492	not observed (therefore probably faint).
Washington	1862, Sept. 6	2401390	6·8
	,, ,, 17	1401	7·5
	1863, Aug. 11	1729	6·0
	1865, May 14	2371	6·5
	,, Sept. 12	2492	7·0

		Julian Day.	Mag.
Washington	1873, Aug. 9	2405380	7·8
	,, Sept. 2	5404	7·3
Cordoba	,, ,, 1	5403	7·0
	1874, ,, 19	5786	7·0
	,, ,, 23	5790	7·0
Cape	1878, Aug. 2	7199	7·3
	,, ,, 16	7213	7·3
	,, ,, 28	7225	7·0

In looking over the Washington Meridian Observations, it appears as if this star had been searched for several times about 1866–1873 and not found, as several small stars in the region were observed; but there is no note that Lac. 8051 was specially looked for and not found on these occasions.

The magnitudes given by Professor Kapteyn (C.P.D., Vol. I p. 93, No. 8) are :—

		Julian Day.	Mag.
Plate 1727	1888, Oct. 22	2410933	10·2
1744	,, ,, 25	0936	10·2
2906	1890, ,, 30	1671	7·2
2913	,, Nov. 3	2040	7·2
2949	,, ,, 14	2051	7·1
2953	,, ,, 19	2056	7·1

From Professor Pickering's article (*Astr. Nach.* 3363) we have :—

Photographs	1889, Summer 8 nights 1890, 6 nights 1891, 6 ,, 1892, 5 ,, 1893, 12 ,, Apr., May, June and July	Variation comparatively small and irregular.

		Julian Day.	Mag.
Photographs	1893, Sept. 11	2412718	< 9·6
	,, Oct. 23	2760	<11·3
	1894, Apr. 30	2949	10·9
	,, May 30	2979	10·3
	,, July 8	3018	9·4
	,, Aug. 7	3048	8·6
	,, ,, 10	3051	8·3
	,, Sept. 12	3084	7·5
	,, ,, 15	3087	7·6
	,, Nov. 12	3145	6·4

		Julian Day.	Mag.
Photographs	1894, Nov. 13	2413146	6·4
	1895, 27 nights	Normal brightness with irregular variations.	
	1896, June 2	3713	6·7
Colonel Markwick	1893, July 14	2659	7·0
	,, ,, 19	2664	7·0
	,, Aug.		<7·0
	,, Sept. 12	2719	<9·0
	1894, Aug. 20, etc.	Confirm Harvard results.	

The Cape observations are :—

Date. 1897.	Julian Day.	Mag.	Colour.
Oct. 14	2414212	11·0	
,, 17	4215	11·0	
,, 19	4217	11·0	
,, 20	4218	11·0	
,, 23	4221	10·6	
,, 27	4225	10·3	
,, 28	4226	10·2	
,, 31	4229	10·2	
Nov. 4	4233	10·1	
,, 11	4240	[9·5]	white
,, 12	4241	9·5	

Date. 1897.	Julian Day.	Mag.	Colour.
Nov. 15	2414244	9·0	perhaps yellowish?
,, 16	4245	8·95	
,, 17	4246	8·9	perhaps reddish?
,, 20	4249	8·85	
,, 24	4253	8·9	
,, 28	4257	8·8	
Dec. 1	4260	(8·85)	
,, 4	4263	(9·1)	

Date. 1898.	Julian Day.	Mag.	Colour.
June 6	2414447	<10·5	
,, 22	4463	<10·3	
,, 30	4470	inv.	
July 18	4489	<11·0	
Aug. 4	4506	<10·5	
,, 12	4514	<10	
Sept. 5	4538	<10·5	
,, 23	4556	inv.	
Oct. 8	4571	,,	
,, 17	4580	,,	

Date. 1898.	Julian Day.	Mag.	Colour.
Nov. 12	2414606	inv.	
1899.			
May 19	4794	8·6	
,, 27	4802	8·7	
June 6	4808	9·0	
,, 13	4819	9·2	
,, 15	4821	9·1	
,, 24	4830	8·85	
,, 25	4831	8·85	
,, 26	4832	8·9	

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Cape observations—*continued.*

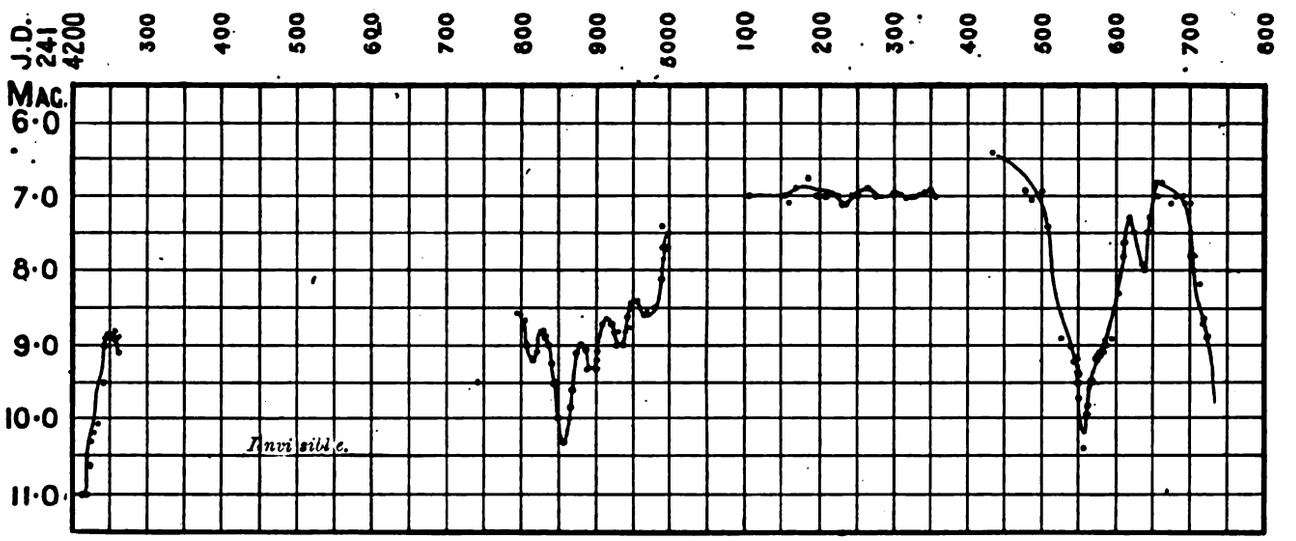
1899.	Julian Day.	Mag.	Colour.
June 30	2414836	9·0	
July 1	4837	9·2	
,, 5	4841	9·5	very good.
,, 12	4848	10·0	
,, 18	4854	10·3	
,, 22	4858	<10·2	
,, 26	4862	9·8	
,, 27	4863	9·6	
Aug. 4	4871	9·1	very good.
,, 9	4876	9·0	
,, 14	4881	9·05	
,, 17	4884	9·3	
,, 31	4898	9·3	
Sept. 2	4900	9·15	
,, 5	4903	9·05	
,, 12	4910	8·7	
,, 16	4914	8·7	yellow 4.
,, 17	4915	8·65	
,, 19	4917	8·7	
,, 24	4922	8·8	
,, 25	4923	9·0	
,, 27	4925	8·8	yellow 4.
Oct. 1	4929	9·0	
,, 3	4931	9·0	
,, 6	4934	9·0	
,, 10	4938	8·7	yellow 5 good.
,, 13	4941	8·6	,, 5.
,, 14	4942	8·75	
,, 18	4946	8·45	yellow 4.
,, 22	4950	8·4	,, 4.
,, 25	4953	8·4	,, 5.
Nov. 3	4962	8·6	
,, 6	4965	8·55	
,, 7	4966	8·6	
,, 10	4969	8·6	
,, 17	4976	8·5	
,, 23	4982	8·1	

1899.	Julian Day.	Mag.	Colour.
Nov. 27	2414986	7·7	colour 6.
,, 29	4988	7·85	
Dec. 1	4990	7·4	yellow 4.
,, 6	4995	7·7	daylight.
,, 8	4997	7·5	good.
1900.			
Mar. 26	5105	7·0	yellow 3.
May 16	5156	7·0	,, 4.
,, 20	5160	7·1	yellow.
,, 31	5171	6·9	
June 14	5185	6·8	
,, 25	5196	7·0	
July 3	5204	7·0	
,, 24	5225	7·0	
Aug. 1	5233	7·1	
,, 4	5236	7·1	3.
,, 14	5246	7·0	
,, 18	5250	7·0	
Sept. 1	5264	6·9	4.
,, 13	5276	7·0	
Oct. 7	5300	6·9	4.
,, 15	5308	6·95	4.
,, 20	5313	7·0	
Nov. 2	5326	7·0	3.
,, 6	5330	7·0	4.
,, 19	5343	6·95	
,, 26	5350	6·9	5·5.
Dec. 1	5355	7·0	
1901.			
Feb. 15	5431	6·4	4.
Apr. 3	5478	6·9	5.
,, 10	5485	7·05	4.
,, 24	5499	6·9	
May 5	5510	7·4	
,, 22	5527	8·9	
June 2	5538	9·0	

1901.	Julian Day.	Mag.	Colour.
June 5	2415541	9·25	
,, 8	5544	9·2	
,, 12	5548	9·35	
,, 14	5550	9·5	
,, 15	5551	9·7	
,, 21	5557	10·4	
,, 22	5558	9·95	
,, 25	5561	9·8	
,, 29	5565	9·5	
July 8	5574	9·2	
,, 10	5576	9·15	
,, 12	5578	9·1	
,, 16	5582	9·1	
,, 19	5585	8·95	
,, 20	5586	9·0	
,, 23	5589	8·95	
,, 27	5593	8·9	
Aug. 9	5606	8·3	
,, 14	5611	7·8	
,, 15	5612	7·8	6.
,, 18	5615	7·6	
,, 24	5621	7·3	6.
,, 30	5627	7·5	good.
Sept. 6	5634	7·9	
,, 9	5637	8·0	
,, 17	5645	7·5	
,, 19	5647	7·3	
,, 22	5650	7·0	4.
,, 24	5652	7·0	
,, 27	5655	6·8	3.
,, 28	5656	6·8	
Oct. 2	5660	6·8	3.
,, 5	5663	6·9	4.
,, 7	5665	6·9	
,, 12	5670	6·9	
,, 15	5673	6·9	

1901.	Julian Day.	Mag.	Colour.
Oct. 17	2415675	7·1	
,, 18	5676	6·9	
,, 19	5677	7·0	4.
,, 21	5679	7·0	
,, 22	5680	7·0	
,, 30	5688	7·0	
Nov. 2	5691	7·1	
,, 5	5694	7·1	
,, 12	5701	7·8	
,, 14	5703	7·8	
,, 16	5705	8·0	
,, 22	5711	8·2	
,, 27	5716	8·7	
,, 30	5719	8·65	
Dec. 3	5722	8·85	
1902.			
Jan. 31	5781	< 9·8	
Mar. 20	5829	< 9·3	
,, 28	5837	<11·5	
,, 29	5838	<11·5	
May 27	5897	9·4	
June 5	5906	9·1	
,, 10	5911	9·3	
,, 16	5917	8·9	
,, 23	5924	8·4	
July 1	5932	7·75	3.
,, 7	5938	7·5	
,, 11	5942	7·7	
,, 14	5945	7·6	
,, 16	5947	7·7	
,, 21	5952	7·7	
,, 26	5957	7·6	4.
Aug. 2	5964	7·2	3·5.
,, 6	5968	6·9	
,, 16	5978	6·9	
,, 17	5979	6·9	3.

The curious light variations of this star are shewn on the diagram on which the Cape observations 1897–1901 have been plotted:—



Dr Roberts remarks "There is no regular period, though there is evidence of a rough cycle of 18 months" (*Astr. Journ.* Nos. 491–492, p. 92).

Practically continuous observations are necessary if it is desired to draw the curve of this variable with accuracy.

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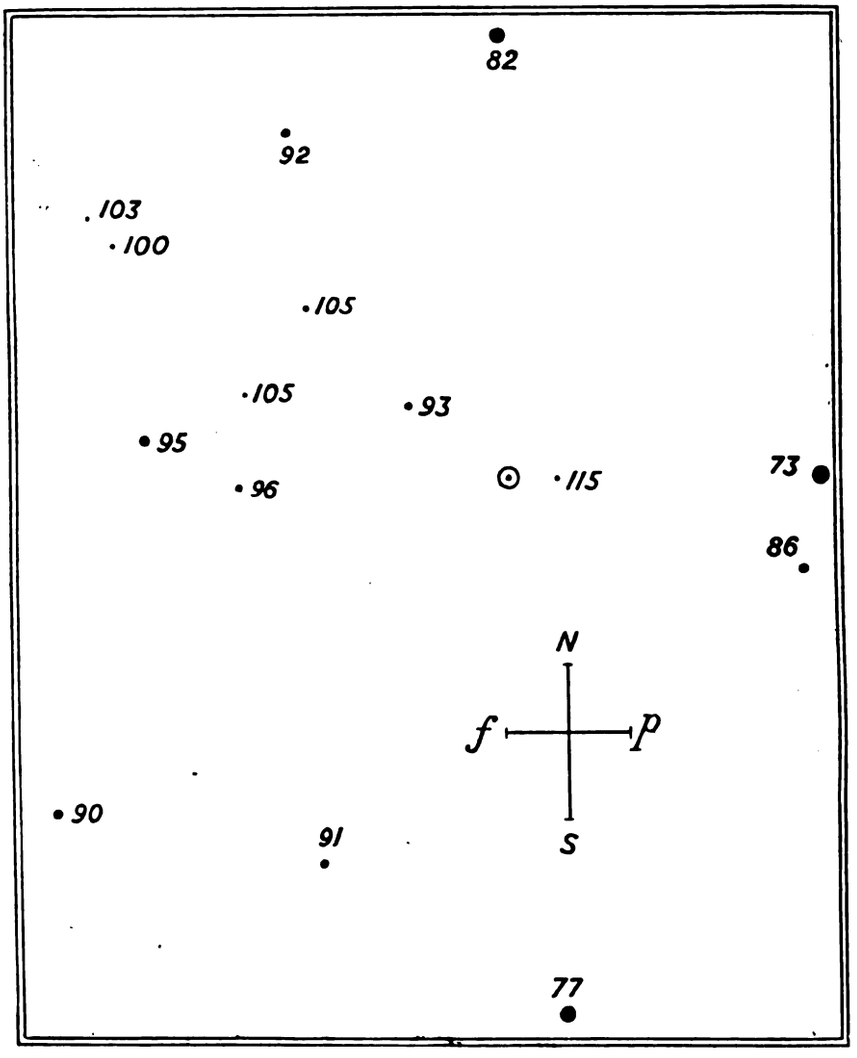
The map shews the comparison stars used.



NOTE.—The magnitudes have been multiplied by ten.
The cross-bars are:—N. to S. = 5′ in Dec. From *p.* to *f.* = $24^{secs.}$ in R.A.
The 9·6 mag. star is double, 2″.
The 7·7 „ probably slightly variable, as estimates range from 7·2 to 7·7 mag.

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7077. T PAVONIS.

Lacaille 8171. Cape 1880, No. 10628. C.P.D.—72°, No. 2452.

	R.A.	Dec.
1875.	$19^h\ 36^m\ 38^s{\cdot}9$	—72° 4′·5.
1900.	**19 39 29·5**	**—72 1·1.**

This star is called 7^m by Lacaille and this is repeated in the Cape Catalogue. In the C.P.D. its mag. is 8·8 (1889, June 6). The star was not observed by Gilliss or at Cordoba. It was presumably looked for and not found by Gould, as he says he cannot explain Lacaille's observation (see *Astr. Journ.* No. 219, 1890, June 11).

The variability of this star is announced by Professor E. C. Pickering in Harvard College Observatory Circular No. 6 of 1896, March 10. It was found by Mrs Fleming as the result of an examination of the Henry Draper Memorial photographs of stellar spectra. The star has a spectrum of the third type having the hydrogen lines bright, and it was this peculiarity which led to its discovery. Professor Pickering gives the following elements resulting from a discussion of 66 plates:—

Range of Magnitude:—$7^m{\cdot}6$ to $12^m{\cdot}1$.
Maxima:—1886 Sept. 6, J.D. 2410156+243^d.

The Cape observations are:—

1899.	Julian Day.	Mag.	Colour.
Sept. 19	2414917	<10·5	
,, 25	4923	11·5	
,, 27	4925	<10·5	
Oct. 3	4931	11·5	
,, 10	4938	11·0	
,, 22	4950	<11	
Nov. 3	4962	[10·5]	
,, 10	4969	10·75	
,, 23	4982	[9·6]	
1900.			
Mar. 26	5105	10·2	
May 16	5156	<10·7	
,, 20	5160	<12·0	
,, 31	5171	<12·2	
July 3	5204	11·5	
,, 24	5225	10·3	
Aug. 1	5233	9·7	
,, 4	5236	9·6	

1900.	Julian Day.	Mag.	Colour.
Aug. 7	2415239	9·2	
,, 14	5246	8·85	
,, 18	5250	8·4	
,, 20	5252	8·1	4.
,, 28	5260	7·4	4.
Sept. 1	5264	7·3	
,, 3	5266	7·3	
,, 7	5270	7·3	6.
,, 11	5274	7·5	
,, 15	5278	7·3	6.
,, 18	5281	7·5	6.
Oct. 7	5300	8·0	
,, 15	5308	8·3	
,, 20	5313	8·6	
Nov. 2	5326	8·75	
,, 6	5330	9·0	
,, 19	5343	9·75	

1900.	Julian Day.	Mag.	Colour.
Nov. 23	2415347	10·0	
Dec. 16	5370	10·8	
1901.			
Feb. 16	5432	<11·5	
Apr. 1	5476	<10·6	
,, 10	5485	10·2	
,, 24	5499	9·55	
May 5	5510	9·2	
,, 15	5520	9·2	
,, 22	5527	9·1	
June 2	5538	9·15	
,, 5	5541	9·2	
,, 12	5548	9·2	
,, 25	5561	9·25	
,, 29	5565	9·4	
July 8	5574	9·8	
,, 20	5586	10·4	

1901.	Julian Day.	Mag.	Colour.
July 27	2415593	11·0	
Aug. 9	5606	12·5	
,, 18	5615	12·5	
,, 30	5627	<12·0	
Sept. 14	5642	<12·0	
,, 22	5650	<12·5	
Oct. 15	5673	<12·5	
,, 19	5677	<12·0	
Nov. 2	5691	<12·0	
,, 12	5701	12·0	
,, 14	5703	11·5	
,, 16	5705	11·0	
Dec. 2	5721	[10·2]	
,, 19	5738	8·7	
,, 31	5750	8·0	
1902.			
Jan. 6	5756	7·8	

We also have the old observations:—

		Julian Day.	Mag.
Lacaille,	1751, Sept. 14	2360856	7
Cape,	1874, Aug. 29	2405760	...
	,, Sept. 3	5770	...
	,, ,, 5	5772	7?
	,, ,, 7	5774	...

The Cape observers do not seem to have made any observation of magnitude, except perhaps on the 5th Sept. 1874, but they had before them Lacaille's mag. of 7.

The observed maxima and those computed from the formula

J.D. 2415034 + $244^d{\cdot}07$ E.

compare thus:—

Mag.	Observation.	Computation.	O.—C.
7·0	J.D. 2360856	J.D. 2360851	+ 5^d·
7·0?	2405760	2405759	+ 1
7·6 P	2410156	10153	+ 3
7·3	2415264	5278	−14
9·1	2415527	522	+ 5

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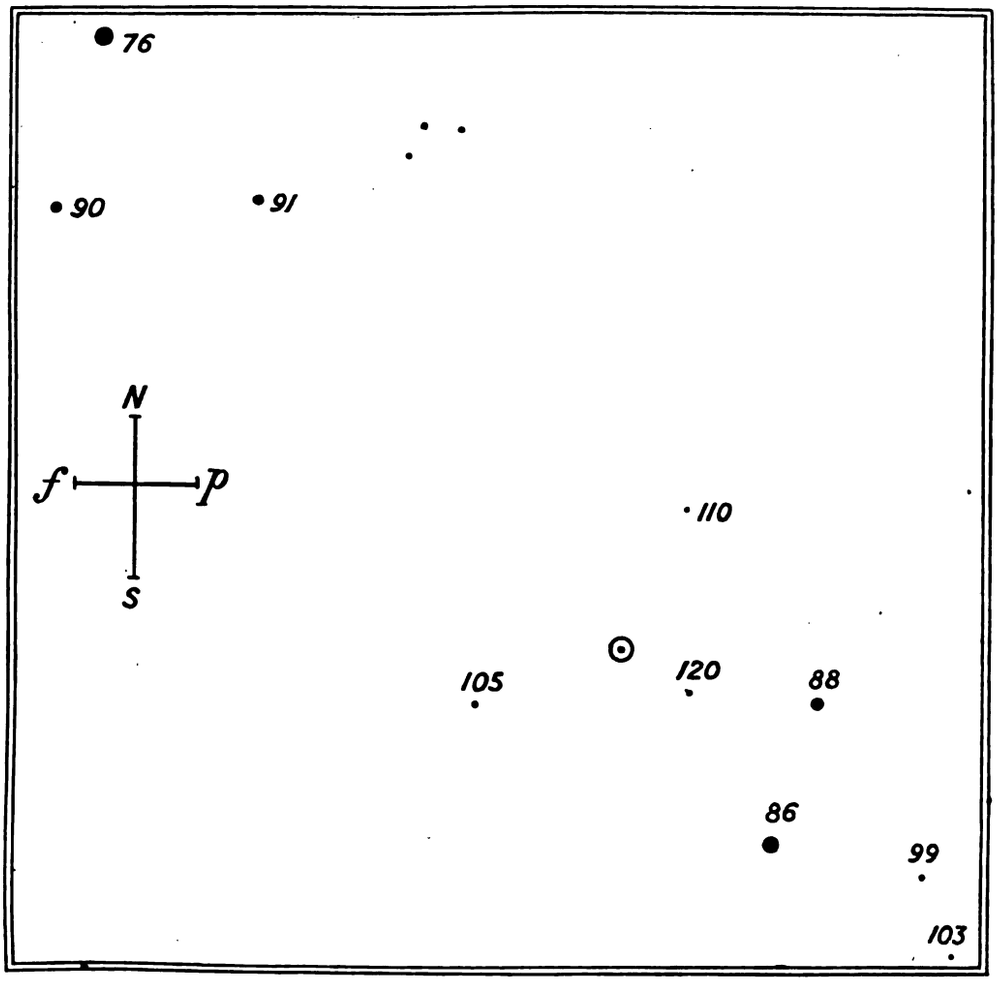
The interval of time between Lacaille's observation and the first Cape observation in 1874 is 44904 days—the number of periods in so great an interval is somewhat doubtful, but as the following table shews, a period of 244 days seems the most probable.

Number of Periods.	Resulting Period. d
182	246·7
183	245·3
184	244·0
185	242·8
186	241·4

The faint maximum ($9^{m}\cdot1$) of 1901 is remarkable.

Colour = 5·0.

The stars used for comparison are charted on the accompanying map.



NOTE.—The magnitudes have been multiplied by ten.
The cross-bars are :—From N to S = 5′ in Dec. From *p*. to *f*. = $48^{secs.}$ in R.A.

A comparison with Dr Roberts's elements (*Astr. Journ.* Nos. 491–492) is as follows.

	Range in Mag.	Colour.	M—m.	Maxima. d
Roberts,	8·0 to <12·0 ?	...	[100d]*	J.D. 2415031+243·9 E.
Cape,	7·3—9·1 ,, <12·5	5	...	2415034+244·07

We also have for comparison (from Chandler's Third Catalogue)

	Range in Mag.	Colour.	M—m.	d
5955 R Draconis,	6·5—8 7 to 12–13	2·0	112d	245·6

and there are many other variable stars with periods between 230 and 270 days.

* Kindly communicated.

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7122. S PAVONIS.

Brisbane 6748. Cape 1880, No. 10683. C.G.A. 27193.

	R.A.	Dec.
1875.	$19^h\ 44^m\ 39^s{\cdot}4$	$-59°\ 30'{\cdot}9$.
1900.	**19 46 47·0**	**−59 27·2.**

The determinations of position of this star are :—

Authority.	Mag.	Epoch.	1875. R.A.	Dec.	Obs.
Brisbane 6748	6–7	1824±	$19^h\ 44^m$ [38ˢ·52]	$-59°\ 30'\ 52''{\cdot}1$	1
C.Z. XIX. No. 1869	8·5	1873·6	39 ·48	53 ·5	1
Cape 1880 No. 10683	7·0	1876·7	39 ·43	55 ·3	3
C.G.A. 27193	7·5	1877·8	39 ·40	55 ·9	4
C.P.D. −59° 7544	9·2	1886·6	39 ·5	54	...

The proper motion is evidently very small.

The variability of this star was announced by Mrs M. Fleming, in No. 3269 of the *Astr. Nach.* of 1894, Dec. 31. It was found through an examination of photographs of stellar spectra taken at the Arequipa Station of the Harvard College Observatory under the direction of Professor S. J. Bailey, which forms part of the work of the Henry Draper Memorial. Mrs Fleming found that the Hydrogen lines H γ and H δ were bright in the spectrum of this star as photographed on July 29, 1892 and measurements on other plates quoted below proved the variability.

As will be seen below, the star is red and the range of magnitude not large, hence no deductions can be drawn from the magnitudes given by the meridian observers.

The photographic magnitudes given by Mrs Fleming are :—

	Julian Day.	Mag.
1889, June 13	2411167	8·7
,, July 8	1192	8·9
,, Aug. 5	1220	9·4
,, ,, 6	1221	9·4
,, ,, 25	1240	9·6
,, ,, 28	1243	9·5
,, Sept. 3	1249	9·6
1889, Sept. 16	2411262	9·6
1891, June 10	1894	8·25 (6 plates)
1892, ,, 8	2258	8·6
,, July 29	2309	8·6
,, Sept. 8	2350	8·8 (2 plates)
,, ,, 22	2364	8·6
1893, Aug. 26	2702	8·67 (7 plates)

Cape visual observations are :—

	Julian Day.	Mag.	Colour.
1898, Oct. 15	2414578	[7·5]	9.
,, ,, 17	4580	7·8	7.
,, ,, 22	4585	[8·0]	7.
,, Nov. 1	4595	7·5	8·5.
,, ,, 12	4606	7·5±	8.
,, ,, 19	4613	7·5	8·5.
,, ,, 29	4623	7·5	8.
,, Dec. 4	4628	8·2	9.
,, ,, 13	4637	8·3	7.
1899, May 27	4802	8·7	7.
,, June 15	4821	8·0	6·5.
,, ,, 22	4828	7·8	6.
,, ,, 24	4830	7·6	7·5.
,, ,, 30	4836	7·7	
,, July 18	4854	7·4	6.
,, ,, 26	4862	7·6	
1899, Aug. 4	2414871	7·5	7·5.
,, ,, 31	4898	7·5	8.
,, Sept. 2	4900	7·5	8.
,, ,, 12	4910	7·7	7·5.
,, ,, 16	4914	7·3	7·5.
,, ,, 27	4925	7·0	7.
,, Oct. 3	4931	7·5	8.
,, ,, 22	4950	7·5	7·5.
,, Nov. 28	4987	8·0	7·5.
1900, Mar. 26	5105	8·5	
,, May 16	5156	8·2	7·5.
,, July 24	5225	7·8	8.
,, Aug. 1	5233	7·7	red.
,, Sept. 13	5276	7·8	8.
,, Nov. 2	5326	7·9	7.
,, Dec. 7	5361	7·5	7·5.

The comparison star is of the 8·0 magnitude, it is about 15′ south, 3^m following S Pavonis.

The range of magnitude and the average colour from the Cape visual observations are as follows :—

Magnitude.	Colour.
7·0 to 8·7	8·0

Dr Roberts, from observations between 1895 and 1899 finds a period of 389 days but he remarks (*Astr. Journ.* Nos. 491–2). "Variation irregular, both as regards form of light-curve, period, and limits of variation."

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7190. S TELESCOPII.

C.P.D. —55°, No. 9313. In no other catalogue.

	R.A.	Dec.
1875.	$19^h\ 56^m\ 25^s$	—55° 54′·2.
1900.	**19 58 26**	**—55 50·1.**

The variability of the star was announced by Professor J. C. Kapteyn in the *Astr. Nach.* No. 3389 of 1896, Nov. 30, on the following evidence.

			Mag.
C.P.D. Plate No.	776	1887, Sept. 17	Julian Day 2410532 9·0
,,	780	,, ,, 20	0535 9·0
,,	2749	1890, July 9	1558 <10·4
,,	2894	,, Oct. 22	1663 <10·4
,,	2919	,, Nov. 4	1676 <10·1

All the plates were carefully inspected and nowhere could any defect in the films be detected.

The Cape visual observations are :—

1897.	Julian Day.	Mag.
Aug. 8	2414145	<10·5
Sept. 5	4173	9·0
,, 13	4181	inv., last observation erroneous.
Nov. 24	4253	11·5 glimpsed after much attention.
,, 28	4257	nil.
,, 29	4258	inv.
Dec. 10	4269	<10·3
1898.		
May 16	4426	<11·0
June 6	4447	<10·5
,, 8	4449	<10·8
,, 30	4471	inv.
July 25	4496	,,

1898.	Julian Day.	Mag.
Aug. 4	2414506	inv.
Sept. 5	4538	,,
,, 22	4555	,,
Nov. 1	4595	,,
,, 12	4606	,,
,, 30	4624	,,
1899.		
June 15	4821	inv.
,, 26	4832	<11·0
,, 30	4836	<11·7
July 26	4862	inv.
Aug. 4	4871	<11·7
,, 31	4898	inv.
Sept. 2	4900	<11·5
,, 25	4923	<12

1899.	Julian Day.	Mag.
Oct. 3	2414931	<12
,, 22	4950	<11·0
Nov. 2	4961	inv.
,, 21	4980	<11·0
,, 28	4987	<11
Dec. 2	4991	inv.
,, 19	5008	<11·0
1900.		
Mar. 26	5105	<10·5
May 16	5156	<10·6
,, 31	5171	<12·5
July 24	5225	<11·0
Aug. 1	5233	<11·0
,, 14	5246	<12·0
,, 24	5256	<12·2

1900.	Julian Day.	Mag.
Sept. 11	2415274	<11·0
Oct. 15	5308	<12·0
,, 23	5316	<12·5
Nov. 10	5334	<12·5
,, 26	5350	<11·0
Dec. 7	5361	<10·5
1901.		
Apr. 10	5485	<11·0
,, 24	5499	<11·0
May 5	5510	<10·8
,, 22	5527	<11·8
July 8	5574	<11·0
Aug. 9	5606	<11·0
,, 30	5627	<11·0
Oct. 2	5660	<12·5

With the exception of the single observation of 1897, Nov. 24, which does not inspire much confidence, this star has not been seen here. That the star appears on two plates taken in 1887 is beyond all reasonable doubt. Is this star a "Nova"?

The question in this state was referred to Professor E. C. Pickering, who, it was believed, would be able to solve the matter by an examination of the collection of photographs taken at the Arequipa Station of the Harvard Observatory. This belief was well founded as Professor Pickering wrote in reply on the 24th Sept. 1901 as follows :—

"This star is variable. Its magnitude is roughly estimated on photographs taken on

	Mag.	Julian Day
1890, Sept. 16	13·0	2411627
,, ,, 22	12·5	1633
1891, June 10	13·0	1894
1893, Aug. 26	11·5	2702
1894, Sept. 15	12·8	3087
1896, June 10	12·2	2413721
,, ,, 17	12·4	3728
,, Aug. 14	13·0	3786
1897, Apr. 26	12·5	4041

We have many more photographs if they are needed."

It will be seen that the variations found by Professor Pickering are not large, viz., $11^m{\cdot}5$ to $13^m{\cdot}0$ and that we may therefore consider the brightness of the star in 1887 very unusual.

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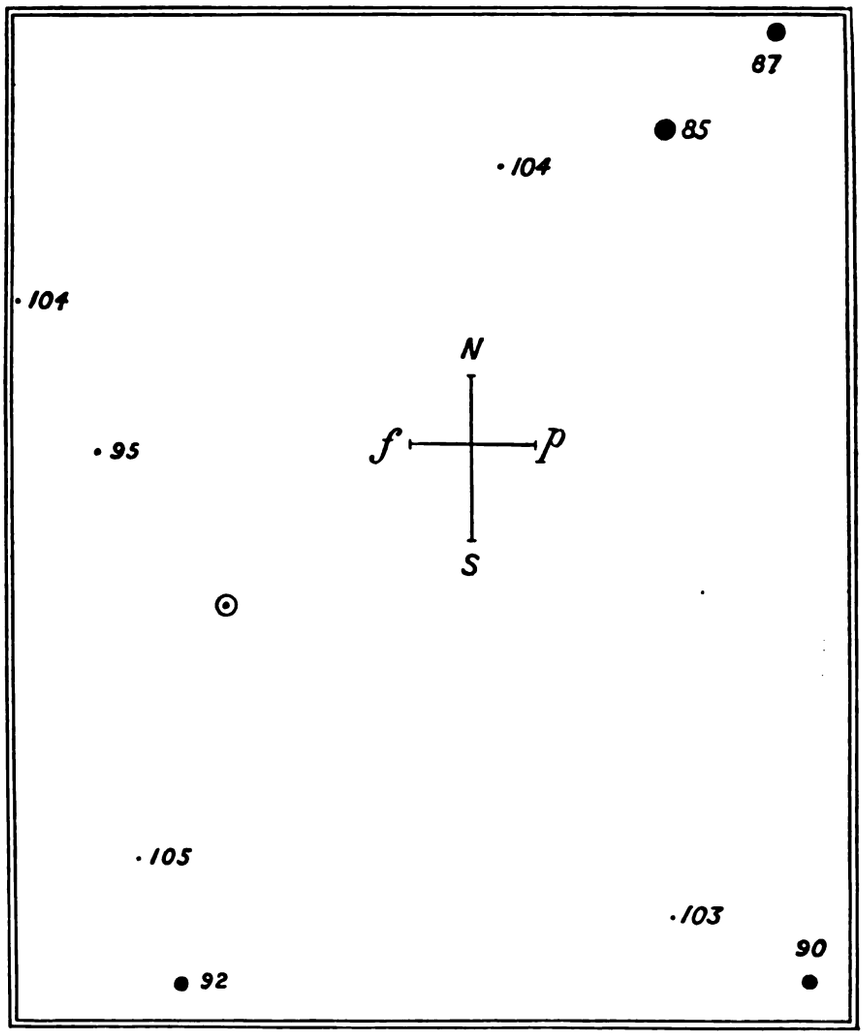
7251. RZ SAGITTARII.

C.P.D. −44°, No. 9765. Cor. DM. −44°, No. 13831.

	R.A.	Dec.
1875.	$20^h\ 6^m\ 45^s{\cdot}3$	$-44°\ 47'{\cdot}2$.
1900.	**20 8 30·3**	**−44 42 ·8.**

This star is a "suspected variable" in the Cordoba Durchmusterung, Vol. III. p. xxviii. It was put on the Cape working list, and its variability was proved after some months' observation. The region of this star is shewn on the accompanying map.



NOTE.—The magnitudes in the map have been multiplied by ten.
The cross-bars are:—From N. to S. = 5′ in Dec. From *p.* to *f.* = $24^{secs.}$ in R.A.

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All the observations recorded so far are:—

		Julian Day.	Mag.
C.P.D. Plate, No. 2868,	1890, Oct. 14	2411655	10·5
Carte du Ciel Plate, No. 553,	1892, Aug. 3	12314	8·8
,, ,, 1741,	1893, July 10	12655	[9·0]
,, ,, 2931,	1894, ,, 20	13030	[9·3]
Cordoba,	,, ,, 24	13034	9·7
,,	,, Aug. 22	13063	9·7

		Julian Day.	Mag.
Carte du Ciel Plate, No. 3096,	1894, Sept. 21	2413093	9·5
,, ,, 3842,	1895, Oct. 2	13469	9·5
Cordoba,	,, Nov. 8	13506	9·7
,,	1896, Oct. 9	13842	7·7
,,	1898, July 13	14484	8·6

Cape observations:—

1901.	Julian Day.	Mag.	Colour.
Apr. 24	2415499	8·9	5.
May 5	5510	8·6	
June 26	5562	8·6	6.
July 27	5593	9·3	8.
Aug. 9	5606	9·5	
,, 10	5607	9·4	
,, 13	5610	9·4	
,, 18	5615	9·5	
,, 24	5621	9·6	7.
,, 27	5624	9·6	
,, 30	5627	9·6	
Sept. 6	5634	9·6	
,, 14	5642	10·2	
,, 17	5645	9·8	
,, 19	5647	9·7	

1901.	Julian Day.	Mag.	Colour.
Sept. 20	2415648	9·75	
,, 21	5649	10·0	
,, 24	5652	10·0	
,, 30	5658	9·75	
Oct. 5	5663	9·6	
,, 8	5666	9·7	
,, 12	5670	9·7	
,, 15	5673	9·6	
,, 18	5676	9·45	
,, 19	5677	9·5	
,, 22	5680	9·35	8.
,, 30	5688	9·0	7.
,, 31	5689	9·1	8.
Nov. 2	5691	9·0	7.
,, 5	5694	8·9	

1901.	Julian Day.	Mag.	Colour.
Nov. 12	2415701	8·9	
,, 14	5703	8·85	7.
,, 16	5705	8·8	8.
,, 22	5711	8·8	
,, 27	5716	8·85	
,, 30	5719	8·7	
Dec. 3	5722	8·7	
,, 10	5729	8·55	7.
,, 14	5733	8·5	7·5.
,, 21	5740	8·6	7.
,, 28	5747	8·65	
1902.			
Jan. 6	5756	8·55	
Mar. 28	5837	9·5	red.
,, 29	5838	9·4	

1902.	Julian Day.	Mag.	Colour.
Apr. 3	2415843	9·5	red.
May 27	5897	9·1	
June 5	5906	8·9	red.
16	5917	8·2	7.
23	5924	8·25	
July 1	5932	8·2	7·5.
7	5938	8·4	
11	5942	8·5	7·5.
14	5945	8·65	
16	5947	8·7	8.
21	5952	8·6	8.
26	5957	8·75	8.
Aug. 2	5964	8·9	
6	5968	8·85	
16	5978	8·95	

Further observations are required before the elements can be determined with any exactitude; in the meantime we write:—

Maxima:—1900, Mar. 17 = J.D. 2415096 + $212^d \cdot 4$ E.
M.—m. = 89^d. Colour:—7·3. Range:—8·2 to 10·0 mag.

7360. RU CAPRICORNI.

1st Munich 24855. 2nd Munich 10412. Cor. DM. −22°, 14789.

	R.A.	Dec.
1875.	$20^h\ 25^m\ 16^s$	−22° 6′·7.
1900.	**20 26 44**	**−22 1 ·7.**

This star is in Professor Kapteyn's List of Suspected Variable Stars on the following evidence:—

Authority.	Date.	Julian Day.	Mag.
m 24855	1847·61	2395854±	8·0
B.D.	1876–1881		nil.
M. 10412	1884 Aug. 8	2409397	10·0
,,	1885 Sept. 16	9801	9·0

Authority.	Date.	Julian Day.	Mag.
Cor. DM. Thome			9·7
O. Stone			nil.
C.P.D.			,,

The Cape observations are:—

1895.	Julian Day.	Mag.
Nov. 8	2413506	9·7 (F)
1899.		
Sept. 25	4923	9·1
1900.		
July 6	5207	<10·5
,, 24	5225	<11·0
Aug. 1	5233	10·1
,, 4	5236	9·8
,, 7	5239	9·75
,, 14	5246	9·65
,, 18	5250	9·6
,, 20	5252	9·7
,, 24	5256	9·6
,, 28	5260	9·55

1900.	Julian Day.	Mag.
Sept. 1	2415264	9·55 yellow 4.
,, 7	5270	9·4
,, 11	5274	9·7
,, 15	5278	9·65
Oct. 7	5300	9·7
,, 15	5308	9·85
,, 23	5316	10·1
Nov. 2	5326	10·7
,, 10	5334	11·2
,, 26	5350	<11·2
Dec. 7	5361	<11·0
1901.		
Apr. 10	5485	<12·0
,, 24	5499	<12·0

1901.	Julian Day.	Mag.
May 5	2415510	<11·5
,, 22	5527	<11·5
June 29	5565	<11·2
July 8	5574	11·6
,, 20	5586	9·8
,, 27	5593	9·65
Aug. 9	5606	9·6
,, 13	5610	9·6
,, 18	5615	9·6
,, 24	5621	9·4
,, 27	5624	9·4
,, 30	5627	9·4
Sept. 3	5631	9·45

1901.	Julian Day.	Mag.
Sept. 6	2415634	9·4
,, 9	5637	9·5
,, 17	5645	9·4
,, 19	5647	9·6
,, 23	5651	9·5
,, 30	5658	9·7
Oct. 5	5663	9·75
,, 8	5666	9·85
,, 18	5676	10·5
,, 21	5679	10·6
,, 30	5688	11·2
Nov. 12	5701	11·4
,, 16	5705	11·5

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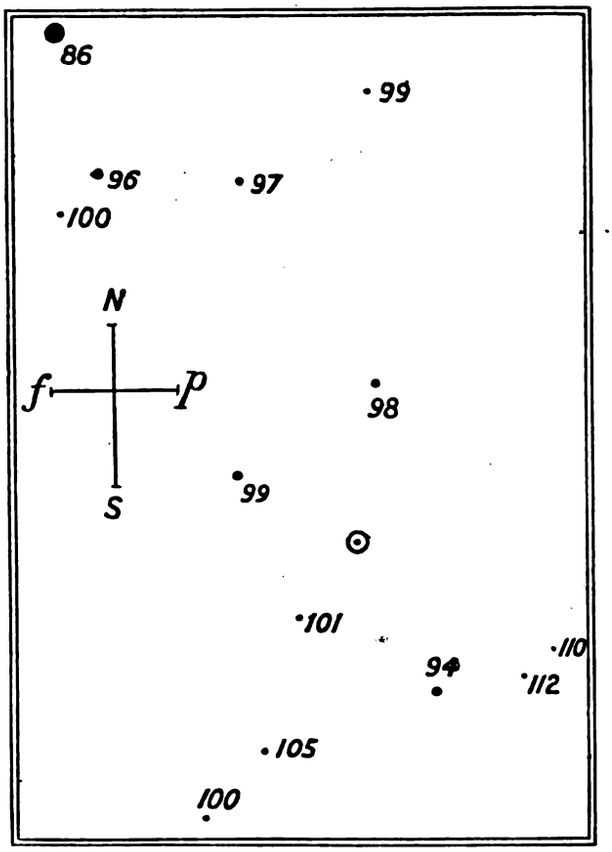
The comparison stars are shewn on the following map.



NOTE.—The magnitudes on the map are multiplied by ten.
The cross-bars are :—From N. to S. = 5′ in Dec. From *p.* to *f.* = 20^{secs}. in R.A.

A preliminary formula for the maxima of this star is

J.D. 2415270 + 341^{d}·0 E.

It compares thus with the observed maxima :—

Mag.	Assumed date of Maximum.	Computed date.	O.—C. d	Mag.	Assumed date of Maximum.	Computed date.	O.—C. d
8·0	J.D. 2395854±	J.D. 2395833	+ 21	9·1	J.D. 2414923	J.D. 2414929	−6
10·0	2409397±	2409473	− 76	9·4	15270	15270	0
9·0	9801	9814	− 13	9·4	15620	15611	+9
9·7	13506±	13565	− 59	9·6	15950	15952	−2

It is evident that some of the assumed maxima are considerably out and that there are inequalities.

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7495. S INDI.

C.Z. XX. No. 1539. C.P.D.—54°, No. 9772.

	R.A.	Dec.
1875.	$20^h\ 47^m\ 7^s{\cdot}1$	—54° 47′·9.
1900.	**20 48 59·1**	**—54 42·3.**

The variability of this star was discovered by Mrs M. Fleming and published in the *Astrophysical Journal* for May 1895. The spectrum is of the third type, having also the hydrogen lines bright, and variability was at once suspected from this peculiarity. The variability was confirmed by Professor E. C. Pickering from an independent examination of the photographs.

Professor J. C. Kapteyn published further photographic testimony in the *Astr. Nach.* No. 3389 of 1896, Nov. 30.

The photographic evidence is as follows :—

Authority.	Date.	Julian Day.	Mag.
C.P.D. Plate No. 779,	1887, Sept. 19	2410534	8·6
,, ,, 791,	,, ,, 23	0558	8·6
Arequipa Plate,	1889, June 20	1174	10·3 ?
,,	,, July 5	1189	<11·3
,,	,, ,, 19	1203	<12·3
,,	,, ,, 21	1205	<11·9
,,	,, ,, 22	1206	<11·6
,,	,, Aug. 22	1237	<12·4
,,	,, Oct. 26	1302	< 9·9
C.P.D. Plate, No. 2920,	1890, Nov. 4	1676	<10·0
,, ,, 2969,	,, ,, 26	1698	<10·0
,, ,, 2996,	,, Dec. 22	1724	< 9·5
Arequipa Plate,	1891, May 21	1874	11·3
,,	,, ,, 22	1875	11·7
,,	,, June 2	1886	<12·1
,,	,, ,, 10	1894	<10·4
Arequipa Plate,	1891, June 10	1411894	12·0
,,	,, July 16	1930	<10·2
,,	1892, Sept. 8	2350	<11·1
,,	,, ,, 8	,,	<12·2
,,	,, ,, 8	,,	<12·2
,,	1893, June 27	2642	10·2
,,	,, July 31	2676	11·3
,,	,, ,, 31	,,	11·4
,,	,, Sept. 23	2710	<12·2
,,	,, ,, 23	,,	<12·3
,,	1894, May 21	2970	8·4
,,	,, July 13	3023	9·3
,,	,, ,, 25	3035	9·7
,,	,, Aug. 11	3052	10·1
,,	,, ,, 11	3052	10·1

The date of the single Cordoba observation is 1873, Aug. 10 = J.D. 2405381 ; mag. 9·5.

A reference to the Cape visual observations will be found in the *Astr. Journ.* No. 468 of 1899, Aug. 29. The complete series is :—

1898.	Julian Day.	Mag.	
Sept. 28	2414561	9·5	
,, 30	4563	9·4	
Oct. 22	4585	9·0	
Nov. 1	4595	8·9	
,, 12	4606	9·1	
,, 19	4613	9·0	
,, 29	4623	9·2	
Dec. 4	4628	9·5	
,, 13	4637	9·85	
,, 20	4644	9·8	
,, 31	4655	<10·0	
1899.			
June 22	4828	<10·5	
,, 25	4831	[10·5]	Identity doubtful at time. Rejected.
July 1	4837	inv.	
,, 5	4841	[12·0]	
,, 12	4848	inv.	
Aug. 31	4898	10·5	
Sept. 2	4900	<10·0	
,, 27	4925	<10·3	
Oct. 22	4950	inv.	

1899.	Julian Day.	Mag.
Nov. 2	2414961	9·8
,, 6	4965	9·5
,, 10	4969	9·1
,, 17	4976	8·95
,, 21	4980	9·0 col. 6.
,, 22	4981	8·9
,, 27	4986	8·85
Dec. 1	4990	8·8 red 7.
,, 4	4993	8·95
,, 9	4998	8·8
,, 15	5004	8·85
,, 19	5008	8·8
,, 22	5011	8·9
1900.		
Jan. 2	5022	8·9
Mar. 26	5105	<10·3
May 16	5156	<10·6
,, 31	5171	<12·0
June 14	5185	<11·0
July 6	5207	<11
,, 24	5225	<11·7

1900.	Julian Day.	Mag.
Aug. 1	2415233	<11 5
,, 14	5246	<12·0
,, 18	5250	<12·5
,, 24	5256	<11·8
Sept. 1	5264	<11·5
,, 11	5274	<11·5
,, 15	5278	<12·5
Oct. 20	5313	<12
Nov. 2	5326	<11·5
,, 10	5334	<12·5
,, 19	5343	<11·1
,, 26	5350	<11·5
Dec. 1	5355	<11·5
,, 7	5361	10·7
,, 12	5366	9·85
,, 14	5368	9·7
,, 16	5370	9·6
,, 18	5372	9·5
,, 26	5380	8·8
,, 27	5381	8·9
,, 29	5383	8·9

1901.	Julian Day.	Mag.
Jan. 2	2415387	8·8
,, 6	5391	8·75
,, 8	5393	8·7
,, 11	5396	8·6
,, 26	5411	8·5
Feb. 15	5431	9·05
Apr. 11	5486	10·75
,, 24	5499	11·7
May 5	5510	<11·8
,, 22	5527	<12·0
July 8	5574	<11·7
,, 27	5593	<12·0
Aug. 18	5615	<12·5
Sept. 14	5642	<12·0
Oct. 5	5663	<12·5
,, 30	5688	<12·5
Nov. 12	5701	<12·0
,, 16	5705	<11·5
Dec. 2	5721	<12·0
,, 31	5750	<11·0

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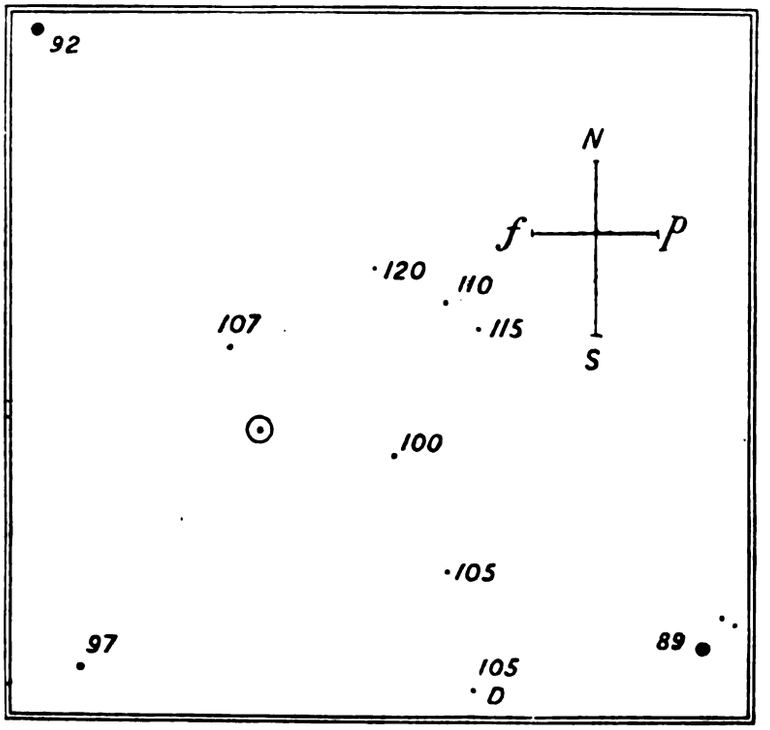
The comparison stars used are marked on the map.



NOTE.—The magnitudes on the map are multiplied by ten.
The cross-bars are :—From N. to S. = 5′ in Dec. From *p.* to *f.* = 28secs. in R.A.

In deducing the mean period, it is advisable to use, if possible, the Cordoba observation of 1873; yet as the magnitude recorded is only 9·5, the star was not then at a maximum. A preliminary computation shews that at the time of the Cordoba observation the maximum had been passed. The Cape observations shew that on the descending branch, the star reaches 9·5 mag. about 45 to 50 days after maximum. We may therefore assume that the maximum in 1873 occurred about 50 days before Gould's observation. A comparison of the maxima derived from observation and the formula

J.D. 2415388 + 402^d·7 E.

is then as follows :—

Mag.	Maxima from Observation. J.D. 2405331	Computed Maxima. J.D. 2405321	O.—C. +10^d
8·6 P	10534	10556	−22
8·4 P	12970	12972	− 2
8·9	14585	14583	+ 2
8·8	14986	14985	+ 1
8·6	15398	15388	+10

Only two determinations of the colour of this star were made here, the mean is 6·5.

A comparison with the elements found by Dr Roberts is as follows :—

	Range of Mag.	Maxima.
Roberts :—	9·0^m to <12·0^m ?	J.D. 2415400 + 405·7^d E.
Cape :—	8·6–8·9 ,, <12·5	15388 + 402·7

In Chandler's Third Catalogue many stars having a close resemblance to the above will be found; one or two examples may be cited :—

	Range.	Colour.	M—m.	Period.
434 S Piscium,	8·2^m–9·3^m to <14·7^m	1·0	200^d ?	404·3^d shortening.
7120 χ Cygni,	4·0–6·5 ,, 13·5	6·5	171·5	406·2
7155 R R Aquilæ,	8·4 ,, <12	6	...	403·0

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7538. RR CAPRICORNI.

Cor. DM. —27°, No. 15202.

	R.A.	Dec.
1875.	$20^h\ 54^m\ 54^s$	—27° 34′·8.
1900.	**20 56 23**	**—27 29·0.**

The discovery of this variable star is thus narrated by Professor E. C. Pickering in the *Astr. Nach.* No. 3379 of 1896, Sept. 26 :—

> Lists of suspected variable stars are published in the Results of the National Argentine Observatory, Vol. XVI. p. xxxii. and Vol. XVII. p. xi. These lists contain 527 and 232 stars respectively, in which the magnitudes were found to be discordant in the observations of the Cordoba Durchmusterung. Especial attention is there called to 26 stars which are indicated by exclamation marks. These stars have been looked for on a number of Draper Memorial photographs by Miss E. F. Leland and the results confirmed by Mrs Fleming.

As a result of this examination, the variability of R R Capricorni and 11 other stars were thus discovered, and of these 6 were quite new. Professor Pickering adds that the laborious work of taking out all the photographs of the regions containing these 6 new variable stars, measuring their brightness, the magnitudes at maximum and minimum, the period and form of light curve, as has been done for other variable stars discovered at Harvard, was then in progress.

Observations by Mr R. H. West of Beirut, are given in the *Astr. Journ.* No. 395 of 1897, Feb. 12. He says, "My observations give independent confirmation : eight observations from 1896, Sept. 7 to Nov. 20, indicate a maximum of $8^m{\cdot}0$ on Sept. 17, the brightness being $9^m{\cdot}8$ when last observed. On 1895, Aug. 22, it was $11{\cdot}5^m$."

The observations found are as follows :—

Authority.	Date.	Julian Day.	Mag.	
Washington Zones,	1846, July 7	2395485	nil.	
,,	,, ,, 10	5488	,,	
,,	1847, June 14	5827	,,	
Cordoba,	1885, ...		8·7	
,,	1886, ...		inv.	
,,	1887, Aug. 20	24010504	9·0	
,,	1888, June 4	10793	9·3	
C.P.D. Plate,	,, Oct. 30	10941	nil.	
Cordoba,	1891, ...		inv.	
R. H. West,	1895, Aug. 22	24013428	11·5	
,,	1897, Sept. 17	13820	8·0	Max.
,,	,, Nov. 20	13884	9·8	
Cape (7-in. refractor)	1897, Aug. 19	14156	9·4	
	,, Sept. 8	14176	9·9	
	,, ,, 14	14182	10·0	
	,, ,, 23	14191	<10·5	

The period appears to be about 277 days.

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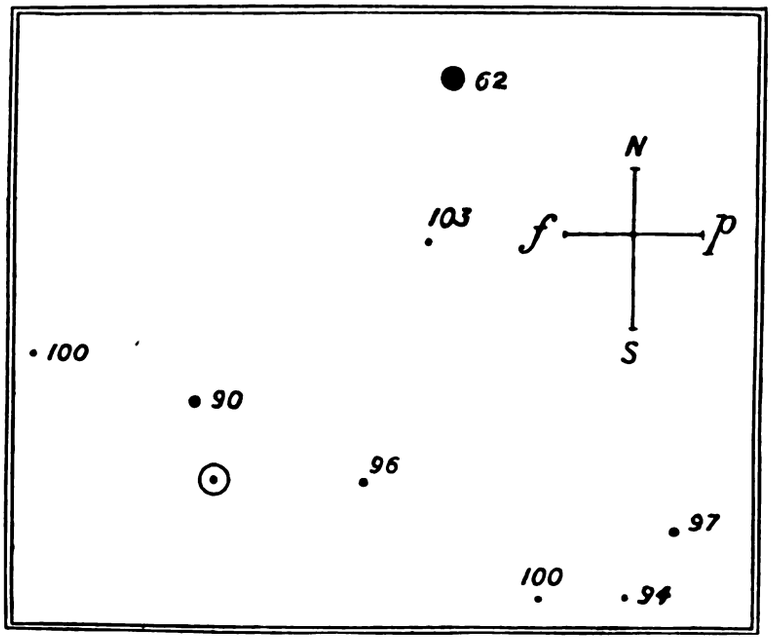
The region of the variable is given on the map.



NOTE.—All magnitudes on the map have been multiplied by ten.
Scale of cross-bars :—N. to S. = 10′. From *p.* to *f.* = 20^{secs}.

7685. S MICROSCOPII.

O.A. No. 21384. Cor. DM. — 30°, No. 18609, 9·5 mag.

	R.A.	Dec.
1875.	$21^h\ 19^m\ 18^s{\cdot}6$	−30° 23′·3.
1900.	**21 20 48 ·1**	**−30 17 ·0.**

This star is No. 204 of Professor J. C. Kapteyn's list of stars contained in catalogues of precision, but missing on the C.P.D. plates [C.P.D. Vol. I. p. (82)]. The variability of the star was announced by him in the *Astr. Nach.* No. 3389 of 1896, Nov. 30. Observations by Mr R. H. West confirmed the variability (see *Astr. Journ.* No. 414 of 1897, Oct. 6). The star is also referred to in the *Astr. Journ.* No. 468 (29th Aug. 1899), but the statement made there about Argelander's observations is erroneous.

The star was looked for in vain at Vienna, and to account for its disappearance Professor Weiss supposed a double error. (See Weiss's Argelander, pp. 500–1, and under Z Puppis p. 50B. *ante*).

The data found, with the observations made here, are as follows :—

Authority.	Date.	Julian Day.	Mag.
Washington Zones,	1846, Sept. 23	2395563	nil.
,,	1847, ,, 16	5921	,,
Argelander,	1849, ,, 16	6652	9·0
C.P.D. Plate,	1888, Oct. 29	2410940	nil.
R. H. West,	1897, June 30	4106	9·7
,,	,, Aug. 25	4162	7·8

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Cape :—

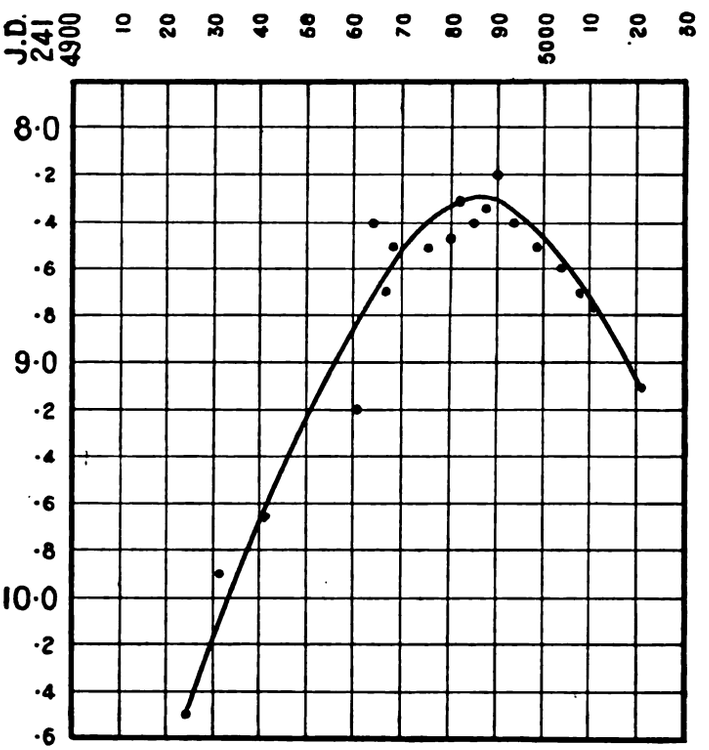
1895.	Julian Day.	Mag.
Nov. 7	2413505	8·0 (F).
,, 19	3517	8·6 ,,
1896.		
Aug. 24	3796	9·5
,, 29	3801	9·65
Sept. 2	3805	10·1
,, 24	3827	inv.
Oct. 26	3859	,,
,, 29	3862	,,
Nov. 4	3868	,,
,, 12	3876	,,
,, 23	3887	12·5
,, 28	3892	<10·0
Dec. 2	3896	10·5
,, 10	3904	9·65
,, 12	3906	9·6
,, 20	3914	9·5
,, 24	3918	9·5
1897.		
Aug. 16	4153	8·0 colour 7.
Sept. 8	4176	8·5
,, 14	4182	8·2 orange.
,, 23	4191	9·0

1896.	Julian Day.	Mag.
Sept. 27	2414195	9·2
Oct. 19	4217	9·65
,, 23	4221	9·8
,, 28	4226	9·8
Nov. 4	4233	10·1
,, 11	4240	10 ±
,, 12	4241	11·0
,, 15	4244	inv.
,, 17	4246	12·0
,, 20	4249	inv.
,, 24	4253	,,
Dec. 10	4269	<10·3
1898.		
June 6	4447	< 9·9
,, 8	4449	<10·0
,, 30	4471	inv.
Aug. 4	4506	< 9·9
,, 12	4514	<10·0
,, 23	4525	11·0
Sept. 14	4547	9·25
,, 21	4554	9·1
,, 25	4558	8·8
Oct. 20	4583	8·2

1898.	Julian Day.	Mag.
Oct. 22	2414585	8·2 red 7.
Nov. 1	4595	8·1 ,, 7·
,, 12	4606	8·4
,, 19	4613	8·95
,, 29	4623	9·4
Dec. 4	4628	9·5
,, 13	4637	9·65
,, 20	4644	9·75
1899.		
June 22	4828	9·15
,, 25	4831	9·25
July 10	4846	9·85
,, 18	4854	10·3
,, 26	4862	11·0
,, 30	4866	<10·0
Aug. 16	4883	<10·2
Sept. 2	4900	<10·3
,, 27	4925	10·5
Oct. 3	4931	9·9
,, 13	4941	9·65
Nov. 2	4961	9·2
,, 6	4965	8·4
,, 7	4966	8·7

1899.	Julian Day.	Mag.
Nov. 10	2414969	8·5
,, 17	4976	8·5
,, 21	4980	8·45
,, 23	4982	8·3 colour
,, 26	4985	8·4
,, 28	4987	8·35
Dec. 1	4990	8·2
,, 4	4993	8·4
,, 9	4998	8·5
,, 15	5004	8·6
,, 19	5008	8·7
,, 22	5011	8·75
1900.		
Jan. 2	5022	9·1
May 20	5160	9·2
July 6	5207	8·8
Aug. 1	5233	9·0
,, 4	5236	9·0
,, 14	5246	9·45
,, 18	5250	9·7
,, 24	5256	9·8
Sept. 1	5264	9·95
Oct. 23	5316	<11·0

The observations of 1899, Sept.–Dec. are plotted on the diagram.



Magnitude Curve of 7685. S MICROSCOPII.

Observations of this variable had been abandoned here, under the assumption that the data obtained would suffice for a determination of the period. Recent observations give a maximum of 7·9 mag. on J.D. 2415842.

The maxima obtained are thus :—

Julian Day.	Interval.	Resulting Period
2413500		
	658d	219d
4158		
	432	216
4590		
	394	197
4984		
	858	214
5842		

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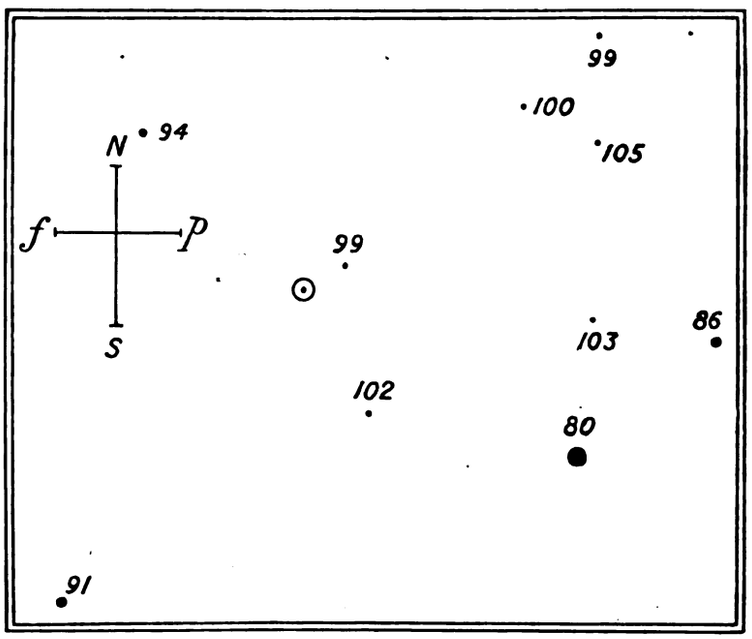
These maxima are sufficiently represented by the formula :—

Maxima = J.D. 2415212 + 213·2^d E.

This variable and its comparison stars can be identified by aid of the map.



NOTE :—The magnitudes have been multiplied by ten.
The cross-bars are :—N. to S. = 5′ in Dec. From *p.* to *f.* = 20^{secs}· in R.A.

From 14 observations in 1899, Dr Roberts has deduced elements (*Astr. Journ.* Nos. 491–492) which compare with the above as follows :—

	Range.	Colour.	M.—m.	Maxima.
Roberts :—	8·0/8·5 to 11·5	...	60^d	J.D. 2415199 + 216^d·1 E.
Cape :—	7·9/8·2 ,, 11·5	6·8	80 ?	5212 + 213 ·2

but since then he has kindly communicated later results.

M.—m.	Maxima.
83^d	J.D. 2415193 + 210^d E.

7994. R PISCIS AUSTRALIS.

C.Z. XXII. No. 342. Cor. DM. – 30°, No. 19092.

	R.A.	Dec.
1875.	22^h 10^m 53^s	—30° 13′·7.
1900.	**22 12 19**	**—30 6·2.**

The variability of this star was announced by Dr B. A. Gould in the *Astr. Nach.* No. 2644 of 1885, Jan. 26, on the following evidence :—

	Julian Day.	Mag.
Cordoba, 1872, Oct. 18	2405085	9·0
,, 1883, June 8–20	08970–82	inv.
,, 1884, Oct. 29–30	09479–80	8·5

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The observations which caused its insertion in Professor J. C. Kapteyn's List of Suspected Variable Stars are as follows :—

		Julian Day.	Mag.
C.P.D. Plate No. 1630	1888, Sept. 14	2410895	9·45
,, 1950	1889, Jan. 5	1008	<10·0
,, 1963	,, ,, 7	1010	<10·0
,, 1969	,, ,, 8	1011	<10·3
,, 1987	,, ,, 11	1014	<10·3

The star does not appear in the body of the C.P.D. It is No. 210 of the list of Missing Stars on p. (82) of Vol. I. of that work.

It also appears in the "List of Suspected Variables" on p. xlv. of Vol. I. of the *Cordoba Durchmusterung*, where the following observations are given :—

	Julian Day.	Mag.
1885, Aug. 4	2409758	9·0
1886–1887 and 1891	...	inv.
1892, Oct. 24	12396	8·5

Comparison stars for this variable and observations by Mr H. M. Parkhurst will be found in No. 372 of the *Astr. Journ.* (1896, Apr. 16).

The Zone containing this star was observed four times at Washington, viz. :—

1846, Sept. 23	J.D. 2395563	star not observed.
,, ,, ,,	,,	,, ,, ,,
1847, ,, 14	5919	,, ,, ,,
,, Oct. 16	5951	,, observed $8^m{\cdot}0$.

The mean period is about $293^d{\cdot}5$.

Range of magnitude :—$8{\cdot}0^m$ to inv.

Dr Roberts (*Astr. Journ.* Nos. 491–492) finds $292^d{\cdot}5$ for the period of this variable.

8040. S GRUIS.

In no catalogue.

	R. A.	Dec.
1875.	$22^h\ 18^m{\cdot}4$	—49° 4′.
1900.	**22 19 ·9**	**—48 57.**

This was announced as a variable star by Professor E. C. Pickering in the Harvard College Observatory Circular, No. 6 of 1896, Mar. 10.

It was found by Mrs M. Fleming through an examination of the Henry Draper Memorial photographs of stellar spectra ; it having a spectrum of the third type with the hydrogen lines bright. Professor Pickering gives the following elements which result from an examination of forty-eight plates :—

Maxima :— 1889, Oct. 14 J.D. 2411290 $+400^d$ E. ?
Range :— $7^m{\cdot}2$ to $12^m{\cdot}3$.

A reference to Cape observations is given in the *Astr. Journ.* No. 468 (1899, Aug. 29).

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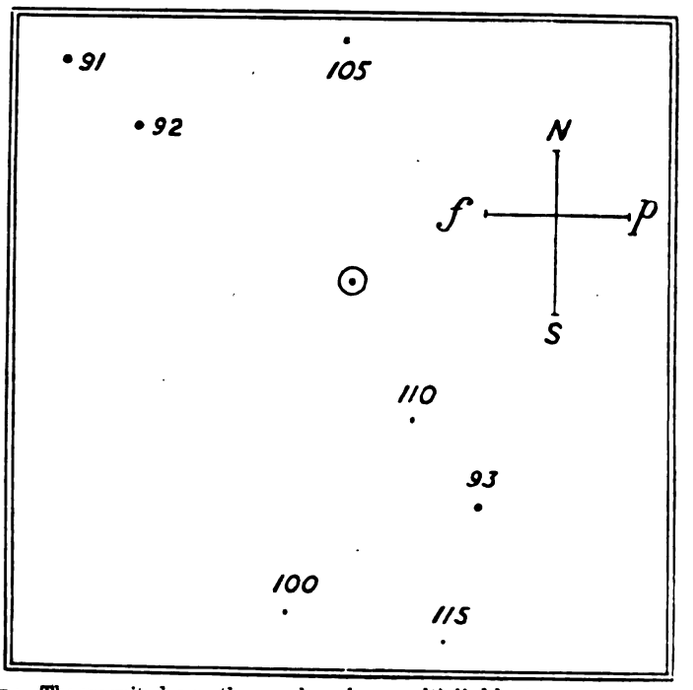
The region of the variable is shewn on the map.



NOTE :—The magnitudes on the map have been multiplied by ten.
The cross-bars are :—From N. to S. = 5′ in Dec. From *p.* to *f.* = $24^{secs.}$ in R.A.
Extra comparison stars :—7·2 $22^h\ 16^m\ 36^s$ $-49°\ 29'·4$
7·6 22 16 42 −49 26 ·7

The data found are :—

		Julian Day.	Mag.
C.P.D. Plate,	1890, Nov. 6	2411678	nil.
C. du C. ,, No. 1861,	1893, July 26	2671	10·7
,, ,, 2150,	,, Oct. 12	2749	(inv.) edge of plate.

Cape visual observations :—

1898.	Julian Day.	Mag.	Colour.
Sept. 23	2414556	7·5	
,, 28	4561	8·0	
Oct. 22	4585	8·5	reddish.
Nov. 1	4595	8·9	7·5.
,, 29	4623	9·8	
Dec. 4	4628	9·8	
,, 13	4637	10·5	
,, 20	4644	10·3	
,, 31	4655	11·0	
1899.			
Jan. 15	4670	11·5	
,, 24	4679	inv. (under 9·5 at least).	
May 3	4778	inv.	
June 22	4828	<10·5	
,, 25	4831	<10	
July 10	4846	inv.	
,, 18	4854	<10·7	
,, 26	4862	perhaps glimpsed.	
Aug. 7	4874	10·9	
,, 16	4883	10·4	

1899.	Julian Day.	Mag.	Colour.
Sept. 2	2414900	9·0	ruddy 6.
,, 6	4904	8·7	
,, 12	4910	8·3±	
,, 16	4914	8·0	
,, 19	4917	8·2	
,, 24	4922	8·2±	
,, 27	4925	8·0±	
Oct. 3	4931	8·0	
,, 6	4934	7·9±	
,, 10	4938	8·1	
,, 14	4942	8·3	
,, 18	4946	8·1	
,, 22	4950	8·4	
Nov. 8	4961	8·5	
,, 7	4966	8·6	
,, 10	4969	8·5	
,, 17	4976	8·8	
,, 23	4982	9·0	
,, 28	4987	9·0	
Dec. 1	4990	9·1	

1899.	Julian Day.	Mag.	Colour.
Dec. 4	2414993	9·15	
,, 13	5002	9·3	
,, 19	5008	9·4	
,, 24	5013	9·5	
1900.			
Jan. 2	5022	9·65	
,, 6	5026	9·8	
Mar. 26	5105	<10·0	
May 16	5156	<10·3	
July 6	5207	<11·0	
Aug. 1	5233	10·8	
,, 4	5236	10·6	
,, 18	5250	10·6	
,, 24	5256	10·3	
Sept. 1	5264	10·4	
,, 7	5270	9·7	
,, 11	5274	9·8	
,, 15	5278	9·7	
Oct. 7	5300	8·4	

1900.	Julian Day.	Mag.	Colour.
Oct. 15	2415308	7·8	
,, 17	5310	7·6	
,, 20	5313	7·4	
,, 23	5316	7·4	
Nov. 1	5325	7·4	
,, 6	5330	7·4	
,, 10	5334	7·5	6.
,, 19	5343	7·5	
,, 23	5347	7·65	
,, 26	5350	7·8	
Dec. 1	5355	7·8	
,, 7	5361	8·0	
,, 12	5366	8·0	
,, 16	5370	8·2	
,, 26	5380	8·2	
,, 29	5383	8·5	
1901.			
Jan. 8	5393	8·85	
,, 21	5406	9·1	

These observations are plotted on the diagram on the next page.

A comparison between the probable dates of maxima and those resulting the formula

J.D. $2415314 + 401^{d}·8$ E.

is as follows :—

Observed.	Calculated.	O.—C.
J.D. 2411290	J.D. 2411296	− 6d
4520	4510	+10
4915	4912	+ 3
5308	5314	− 6

	Maxima.	Minima.
Range of magnitude :—	7·4 — 8·0 to	[11·5 — 12·5]

M—m. = 150^{d}±
Colour = 6·5

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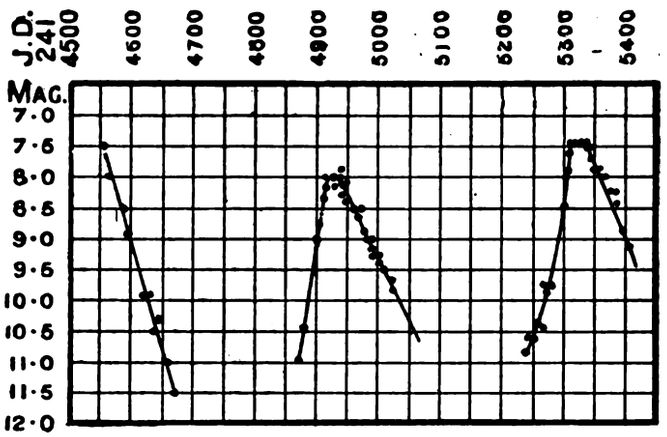
These elements are more or less uncertain, although they are probably very nearly correct.



Light Curve of 8040. S GRUIS.

A comparison with Dr Roberts's elements in the *Astr. Journ.* Nos. 491–492 shews :—

	Range.	Maxima.
Roberts :—	$8{\cdot}2^m$ — $< 12{\cdot}0^m$?	J.D. 2415330 + 410d·0
Cape :—	7·4/8·0 — < 11·5 ?	2415314 + 401 ·8

An examination of Chandler's Third Catalogue shews that there are many variables with periods of 400 to 410 days which bear a close resemblance to S Gruis, see for example 5889 U Herculis. See also 7495 S Indi, page 146B.

8093. R INDI.

C.Z. XXII. No. 806. C.G.A. 30765.

	R.A.	Dec.
1875.	$22^h\ 27^m\ 3^s{\cdot}8$	—67° 56′·0.
1900.	**22 28 52·7**	**—67 48·4.**

This is No. 944 of Professor J. C. Kapteyn's list of stars in catalogues of precision, but missing on the C.P.D. plates (see C.P.D., Vol. III. p. 68.)

Its variability was announced by Dr. B. A. Gould in Vol. I. of the *Cordoba Zone Catalogue*, p. xiv. (1884) on the following evidence :—

		Julian Day.	Mag.
Cordoba,	1873, Nov. 9	2405472	8·0
,,	188–,	Looked for and not found.	
,,	1883, Nov. 1	2409116	8·5
,,	,, ,, 4	9119	9·0

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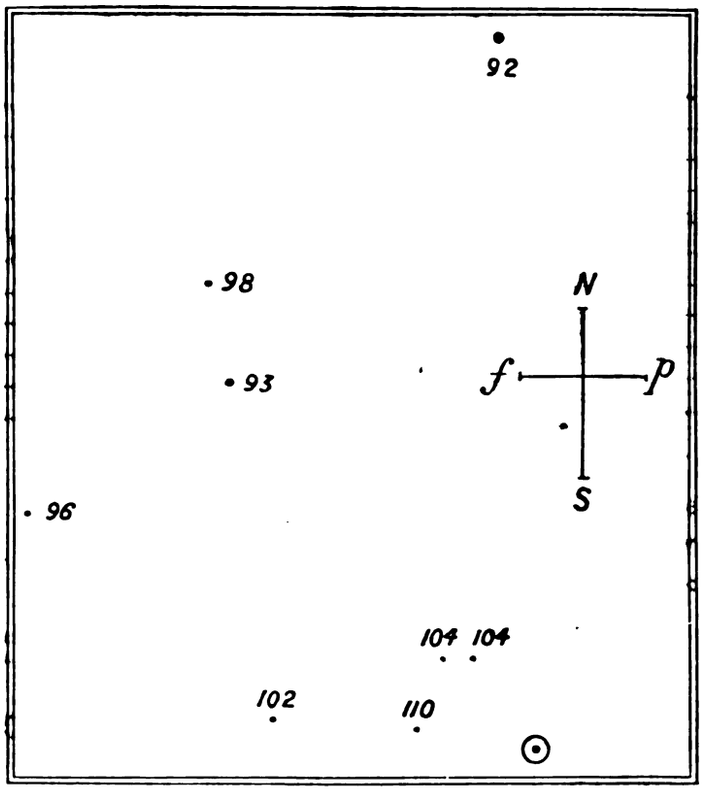
This variable can be located by aid of the following map :—



NOTE.—The magnitudes on the map are multiplied by ten.
The cross-bars are :—From N to S = 5′ in Dec. From p to f = $40^{secs.}$ in R.A.

The Cape observations are :—

1898.	Julian Day.	Mag.	Colour.
Dec. 7	2414631	inv.	
,, 10	4634	,,	
,, 20	4644	,,	
1899.			
Jan. 15	4670	inv.	
,, 24	4679	,,	
June 22	4828	,,	
July 18	4854	,,	
Aug. 7	4874	,,	
Sept. 2	4900	<10	
,, 27	4925	10·2	
Oct. 3	4931	10·0	
,, 6	4934	10·0	
,, 10	4938	9·9	
,, 14	4942	9·9	
,, 18	4946	9·5	
,, 22	4950	9·4	
,, 25	4953	9·25	
Nov. 2	4961	9·3	
,, 7	4966	9·0	
,, 10	4969	8·9	

1899.	Julian Day.	Mag.	Colour.
Nov. 17	2414976	8·9	
,, 21	4980	9·0	5.
,, 23	4982	9·05	
,, 27	4986	9·1	
Dec. 1	4990	9·1	
,, 4	4993	9·0	
,, 8	4997	9·1	
,, 13	5002	9·2	
,, 19	5008	9·3	
,, 24	5013	9·4	
1900.			
Jan. 2	5022	9·45	
,, 4	5024	9·5	
,, 6	5026	9·65	
,, 10	5030	9·8	
May 16	5156	9·6	
July 6	5207	8·7	
,, 24	5225	9·05	
Aug. 1	5233	9·2	
,, 14	5246	9·7	
,, 18	5250	9·75	

1900.	Julian Day.	Mag.	Colour.
Sept. 1	2415264	10·0	
,, 7	5270	10·0	
,, 15	5278	10·2	
Oct. 7	5300	<10·5	
,, 20	5313	<12	
Nov. 10	5334	[12·0]	
1901.			
Apr. 10	5485	10·7	
,, 24	5499	11·0	
May 5	5510	<11·2	
,, 22	5527	<11·5	
June 5	5541	<10·7	
,, 12	5548	12·5	
,, 29	5565	<11·0	
July 8	5574	10·5	
,, 10	5576	10·5	
,, 20	5586	9·8	
,, 27	5593	9·2	
Aug. 9	5606	8·9	
,, 10	5607	9·0	
,, 13	5610	8·8	4.

1901.	Julian Day.	Mag.	Colour.
Aug. 18	2415615	8·7	7.
,, 24	5621	8·7	
,, 27	5624	8·3	
,, 30	5627	8·6	
Sept. 3	5631	8·7	
,, 6	5634	8·6	
,, 9	5637	8·5	
,, 14	5642	8·8	
,, 17	5645	8·7	
,, 19	5647	9·0	
,, 21	5649	9·0	
,, 23	5651	9·1	
,, 28	5656	9·25	
Oct. 5	5663	9·4	
,, 8	5666	9·6	
,, 15	5673	9·9	
,, 19	5677	10·0	
Nov. 12	5701	11·3	
,, 16	5705	<11·0	
Dec. 2	5721	<11·0	
,, 18	5736	<11·5	

The maxima observed compared with the formula

J.D. 2415293 + $216^{d}\cdot0$ E.

agree as follows :—

Mag.	Observation.	Computation.	O.—C.
8·0	J.D. 2405472	J.D. 2405473	− 1d
8·5	9116	9145	−29
8·9	14967	14967	−10
8·6	15196	15193	+ 3
8·5	15624	15625	− 1

Colour = 5 ±.
M—m. = 75^{d} ±.

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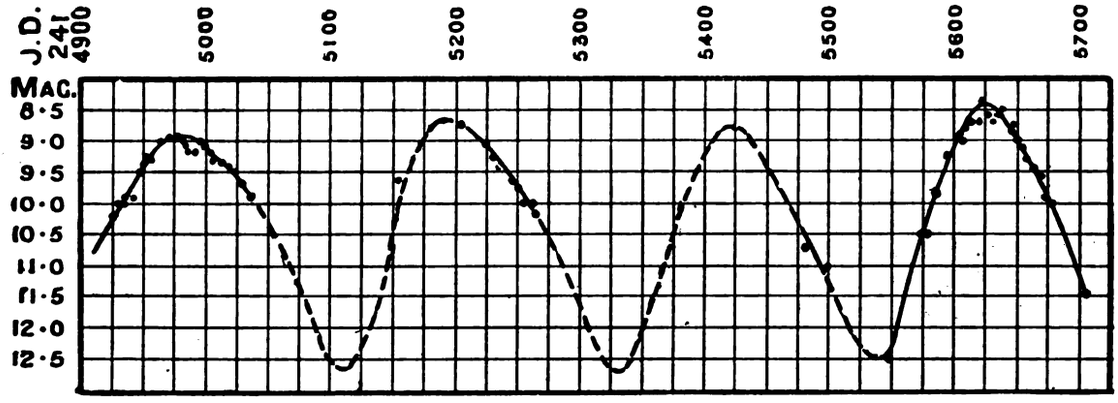
The diagram shews the Cape observations; it indicates the presence of a slight secondary maximum, about 20 days after the chief maximum.



Magnitude Curve of 8093. R INDI.

This star has also been observed at Lovedale.

Elements by Dr Roberts will be found in the *Astr. Journ.* No. 497 of 1901, Apr. 29; they compare as follows with the Cape elements :—

	Range of Mag.	Colour.	M—m.	Maxima.
Roberts :—	8·0 to 12·5 ?	...	...	J.D. 2415194 + 209^d
Cape :—	8·5–8·9 ,, 12·5	5	75^d ?	2415193 + 216

This star may be compared with the following taken from Dr Chandler's Third Catalogue :—

	Range of Mag.	Colour.	M—m.	d	
1222 R Persei,	7·7–9·2 to 12·8–13·5	8·0	96^d	210·1 +	Inequalities.
1894 T Columbæ,	7·6 ,, 11·3	...	...	218·	
4492 Y Virginis,	8·0–9·4 ,, 11·5–13·0	3·6	85 ?	218·8	
4596 U Virginis,	7·7–8·1 ,, 12·2–12·8	1·1	88	207·0	

and several other stars of similar light change.

8588. R PHENICIS.

Z.C. XXIII. No. 1353. C.P.D. —50°, No. 11883. Cor. DM.—50°, No. 14083, 9·9^m.

	R.A.	Dec.
1875.	23^h 49^m 57^s·5	—50° 28′·9.
1900.	**23 51 15·7**	**—50 20·6.**

The variability of this star was announced in the *Astr. Nach.* No. 2644 of 1885, Jan. 26, by Dr B. A. Gould. The evidence he adduced is given below; besides these Cordoba observations and the photo-observation of the C.P.D. no observations have been published, with the exception of my own in the *Astr. Journ.*, No. 468 of 1899, Aug. 29. All the observations found are given below :—

		Julian Day.	Mag.
Cordoba,	1872, Nov. 23	2405121	8·5
	1882, Nov. (frequently looked for)		inv.
	1884, Oct. 31	2409381	[9·0]
	,, Nov. 1	2409482	[9·5]
C.P.D.,	1889, Dec. 24	2411361	9·0

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Cape :—

1898.	Julian Day.	Mag.	Colour.
Oct. 15	2414578	7·4	7.
,, 22	4585	7·6	6.
Nov. 30	4624	10·0	
Dec. 4	4628	10·0	
,, 14	4638	10·5	
,, 20	4644	10·6	
,, 31	4655	10·8	
1899.			
Jan. 15	4670	11·5	
,, 24	4679	< 10·0	
June 25	4831	7·75	4·
July 18	4854	8·4	
,, 26	4862	8·8	
Aug. 8	4875	8·6	red.
,, 16	4883	9·4	
,, 31	4898	10·4	
Sept. 6	4904	10·2	
,, 12	4910	10·5	
,, 19	4917	10·5 ±	
,, 27	4925	11·5	
Oct. 4	4932	11·5	

1899.	Julian Day.	Mag.	Colour.
Oct. 22	2414950	< 11·5	
Nov. 21	4980	< 11·5	
Dec. 1	4990	< 11·5	
,, 19	5008	11·8	
,, 24	5013	11·0	
1900.			
Jan. 2	5022	10·5	
,, 4	5024	10·25	
,, 6	5026	9·85	
,, 10	5030	9·85	
,, 12	5032	9·6	
,, 14	5034	9·5	
,, 16	5036	9·5	
,, 22	5042	9·3	
,, 24	5044	9·0	
,, 27	5047	8·9	
,, 31	5051	8·9	
Feb. 4	5055	8·8	
,, 8	5059	9·0	
,, 14	5065	8·8	
,, 20	5071	8·2	

1900.	Julian Day.	Mag.	Colour.
Feb. 21	2415072	8·2	
,, 25	5076	8·2	
Mar. 3	5082	7·95	
,, 5	5084	7·8	
,, 6	5085	7·8	
,, 10	5089	7·8	
,, 18	5097	7·65	
,, 22	5101	7·5	
,, 27	5106	7·4	
May 16	5156	< 8·5	
June 14	5185	10·6	
Aug. 13	5245	< 10·5	
,, 18	5250	< 12·5	
Sept. 1	5264	< 10·5	
Oct. 7	5300	9·5	
,, 15	5308	9·4	
,, 20	5313	9·25	
Nov. 1	5325	9·0	
,, 6	5330	9·0	
,, 7	5331	8·5	
,, 10	5334	8·2	

1900.	Julian Day.	Mag.	Colour.
Nov. 19	2415343	8·5	
,, 23	5347	7·9	
,, 25	5349	7·9	
Dec. 1	5355	7·7	
,, 7	5361	7·4	
,, 12	5366	7·7	
,, 14	5368	7·6	
,, 16	5370	7·8	
,, 18	5372	7·6	
,, 24	5378	7·8	
,, 26	5380	7·4	6.
,, 27	5381	7·6	
,, 29	5383	7·8	
1901.			
Jan. 2	5387	7·7	
,, 8	5393	7·9	
,, 11	5396	7·9	
,, 16	5401	8·1	
,, 21	5406	8·4	
,, 26	5411	8·3	
Feb. 9	5425	9·1	

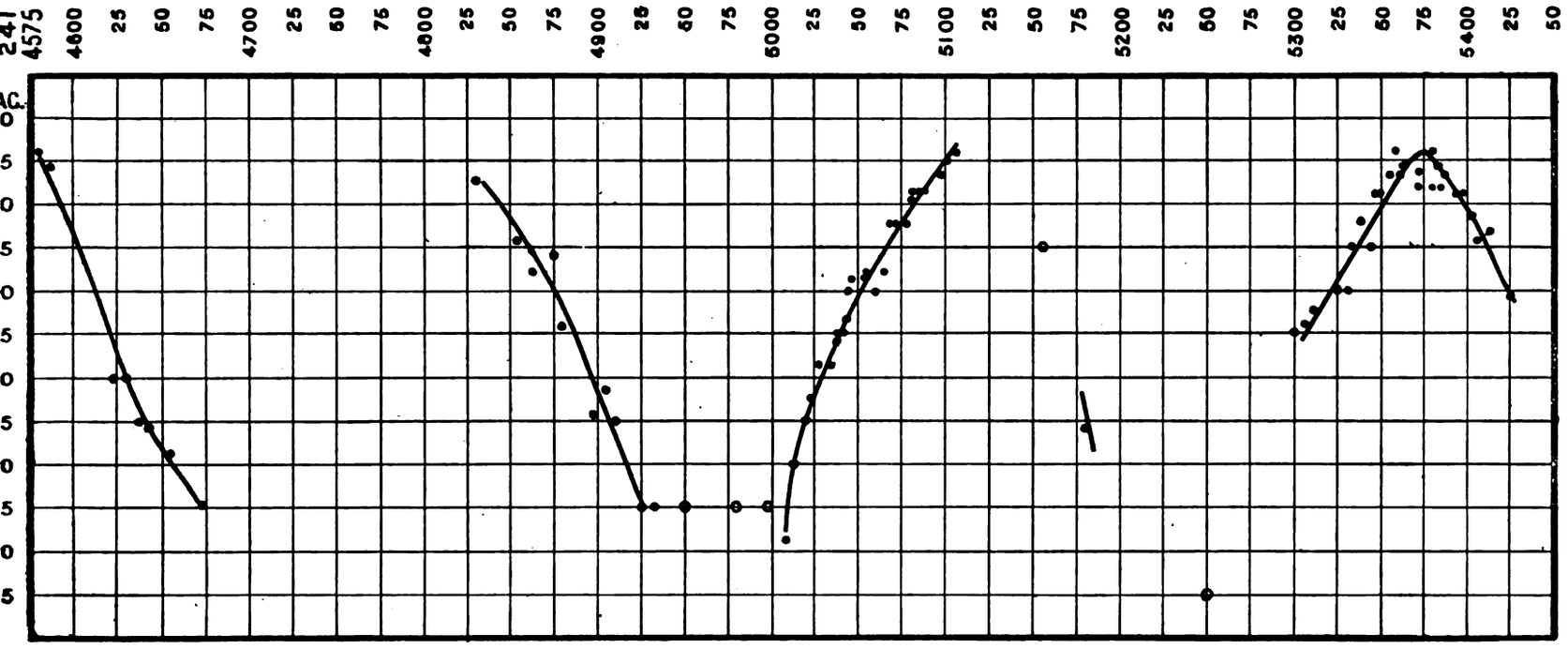
The best epochs of maximum from the above data with their allowable errors are given below under the column O. The column C. results from the formula

Maximum = 1900, Dec. 17 or J.D. 2415371 + 268d·9 E.

O.	C.	O.—C.
2415366 ± 7d	2415371·0	− 5·0d
15106 ± 5	15102·1	+ 3·9
14831 ± 20	14833·2	− 2·2
14578 ± 15	14564·3	+13·7

O.	C.	O.—C.
2411361 ± 40d	2411337·5	+23·5d
09450 ± 40	09445·2	− 5·2
05121 ± 30	05152·8	−31·8

The observations made in 1898–1901 have been plotted on the diagram.



Magnitude Curve of 8588. R PHENICIS.

It gives

Range = 7·4m to 13m ?
M—m. = 130 days ±

The colour of the star is orange red = 5·8.

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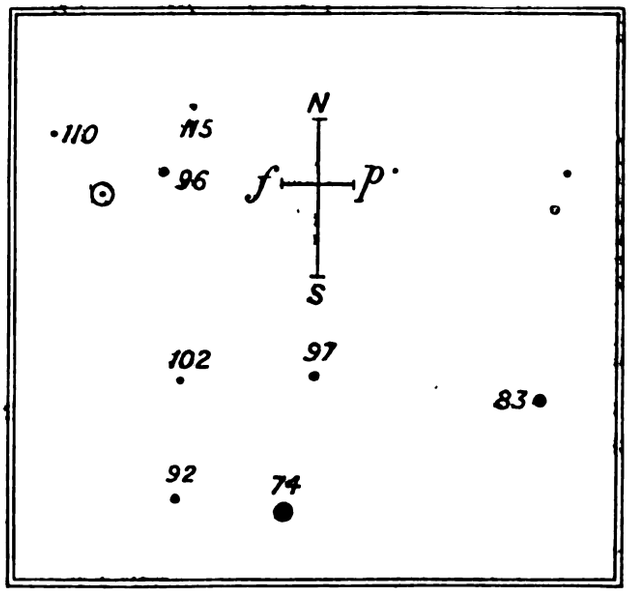
There are, it is evident, periodic inequalities; some years must elapse before the above elements can be improved.

The star will be easily recognized by the subjoined map.



NOTE.—The magnitudes of the comparison stars have been multiplied by ten.
Scale N. to S. = 5′; *p.* to *f.* = 20^{secs}.

A comparison with Roberts's elements (*Astr. Journ.* Nos. 491–492,) is as follows :—

	Range of Mag.	Colour.	M—m.	Maxima.
Roberts :—	7·4/8·0 to 12·0 ?	...	137^d ?	J.D. 2415090 + 270^d E.
Cape :—	7·4 to 13·0 ?	5·8	130 ?	2415102 + 268·9

Compare also (Chandler Third Catalogue)

	Range of Mag.	Colour.	M—m.	Period.
906 R Trianguli	5·8/7·1 to 11·7	5·4	119^d	268·0^d
1805 V Orionis	8·4 ,, <13	4·2	120	266·0
2976 V Cancri	6·8/7·7 ,, <12	4·3	110	272·1
5157 S Boötis	7·7/8·5 ,, 12·5/13·2	2·8	126	268·2 +0^d·25 E^2.
5190 R Camelis	7·2/8·6 ,, 11·8/13·5	2·1	120 ?	269·5
6905 R Sagittarii	7·0/8·0 ,, 12·5	3·6	145	268·7 with 20^d inequality.
7192 Z Cygni	7·1/8·5 ,, 11·5/12·0	9·0	125 ?	265·0

and many others.

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8604. S PHENICIS.

Lacaille 9672. C. G. A. 32334. Cape 1880, No. 12377.

	R. A.	Dec.
1875.	$23^h\ 52^m\ 35^s{\cdot}7$	$-57^\circ\ 16'{\cdot}3$.
1900.	**23 53 54·1**	**−57 7·9.**

The determinations of the position of this star are :—

Authority.	Mag.	Epoch.	R. A. 1875.	Dec.	Obs.
Lacaille 9672,	6·5	1751±	$23^h\ 52^m\ 39^s{\cdot}1$	$-57^\circ\ 16'\ 49''{\cdot}$	1
C. Z. XXIII. 1428,	7·0	1873·8	35 ·54	14 ·6	1
C. G. A. 32334,	7·1	1874·8	35 ·80	15 ·0	4
Cape 1880, 12377,	7·0	1875·8	35 ·73	17 ·8	3
C.P.D. −57° No. 10394,	7·8	1889·9	35 ·1	12	...

The variability of this star was announced by Mrs M. Fleming in the *Astrophysical Journal* for May 1895. Its discovery was due to the examination of the photographs of stellar spectra taken at Arequipa, under the direction of Professor S. J. Bailey, which forms part of the work of the Henry Draper Memorial. This star was suspected of variability as it has a spectrum of the third type having also the hydrogen lines bright. Conclusive evidence of variability was obtained by examination of 22 chart plates, viz. :—

		Julian Day.	Mag.
1889,	July 17	2411201	8·2
,,	Aug. 20	1235	8·4
,,	Sept. 11	1257	8·4
,,	Oct. 8	1284	7·2
,,	,, 8	,,	7·5
1891,	June 30	1914	8·7
,,	Aug. 20	1965	7·8
,,	,, 20	,,	7·7
,,	,, 21	1966	8·2
,,	Sept. 17	1993	8·3
1892,	May 16	2235	8·2
,,	,, 16	,,	8·2
1892,	Aug. 16	2412327	8·4
,,	Sept. 5	2347	8·4
1893,	July 24	2669	8·4
,,	,, 27	2672	8·2
,,	Aug. 21	2697	8·2
,,	Sept. 20	2727	8·1
,,	,, 27	2734	8·3
,,	Oct. 23	2760	8·2
,,	Nov. 17	2785	8·6
1894,	July 24	3034	8·0

The Cape visual observations are :—

1898.	Julian Day.	Mag.	Colour.
Oct. 15	2414578	7·6	
Nov. 30	4624	7·0	
Dec. 4	4628	7·5 ±	
,, 14	4638	7·1	
1899.			
Jan. 15	4670	6·9	
Feb. 4	4690	8·4	
,, 10	4696	8·1	red = 5.
,, 12	4698	7·9	red.

1899.	Julian Day.	Mag.	Colour.
June 25	2414831	8·1	
July 18	4854	7·6	red 6.
Aug. 7	4874	7·2	
,, 16	4883	7·0	
Sept. 6	4904	7·0	
,, 16	4914	7·25	
,, 27	4925	7·0	
Oct. 3	4931	7·1	

1899.	Julian Day.	Mag.	Colour.
Oct. 22	2414950	7·2	
Nov. 2	4961	7·25	
,, 11	4970	7·2	red 6.
,, 28	4987	7·3	
Dec. 1	4990	7·2	
,, 19	5008	6·95	
,, 24	5013	7·0	
1900.			
Jan. 2	5022	7·1	

1900.	Julian Day.	Mag.	Colour.
Jan. 16	2415036	7·1	
Feb. 4	5055	6·9	
,, 14	5065	6·9	
Mar. 6	5085	7·0	red 6.
Aug. 13	5245	6·95	
1901.			
Feb. 22	5438	6·8	red 7.

The comparison stars used were as follows :—

	Mag.	R. A.	Dec.
1875,	7·0	$23^h\ 50^m\ 12^s$	$-57^\circ\ 51'$
,,	7·5	51 42	−57 54
,,	6·8	52 2	−57 59
,,	8·6	52 20	−57 42
,,	8·7	56 18	−57 29

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This star would appear to be irregularly variable.

		m	m	Colour.
Range of magnitude :—	Visual	6·8	to 8·4.	6·0
,, ,,	Photographic	7·2	to 8·7	

Regarding this star, Dr Roberts writes (*Astr. Journ.* Nos. 491–492)
"Variation irregular. The full elements of variation are :—

Period.	$151^d \cdot 2$
Chief Maxima,	J.D. 2415058
,, Minima,	5143
Second Maxima,	5169
,, Minima,	5193

Certain full-light periods have been observed without any indication of a secondary maxima or minima taking place. The chief maxima and minima are also affected by perturbations."

The light range found by Roberts is from 7·4 to 8·2 mag.

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MISCELLANEOUS STARS EXAMINED.

The stars of the following list were drawn from various sources and put on the working list, because they had in some way or other been suspected of variability, or some other peculiarity.

The results of observation are either negative or inconclusive.

Telescope used throughout, . . 7-inch equatorial.
Observer, ... R. T. A. Innes.
R.A. and Dec. for 1875.

$0^h\ 32^m\ 38^s{\cdot}6$ $-26°\ 17'{\cdot}2$

O.A. 325.
9·0 mag. red in C.G.A.
Cape :—1897, Jan. 29, 9·0 mag., white.
,, Feb. 4, 9·0 ,, pale orange = 3.
,, Sept. 13, 8·8 ,, whitish or bluish.
Star 9·6 mag. at $0^h\ 32^m\ 54^s$, $-26°\ 17'$ is double.

$1^h\ 19^m\ 58^s$ $-57°\ 59'{\cdot}6$

This star was used by Sir David Gill in finding the parallax of Achernar, (*Cape Annals*, vol. viii. p. 48B.).
Cape :—1902, Apr. 13, 8·8 mag.
,, ,, 16, 9·0 ,,
,, ,, 23, 8·8 ,,
The C.P.D. has an 8·8 mag. star at $1^h\ 18{\cdot}0^m$ $-57°\ 51'$ which has been taken as = 9·4 mag. in comparison.

$1^h\ 21^m\ 23^s$ $-33°\ 33'{\cdot}7$

The existence of a star here was suspected from a photo-plate.

Cape :—1897, Dec. 18, inv.		1898, Jan. 15, inv.	
,, ,, 23, ,,		,, Feb. 8, ,,	
,, ,, 28, ,,		,, ,, 20, ,,	
1898, Jan. 4, ,,		,, May 16, ,,	

$2^h\ 9^m$ $-83°\ 20'$

Gilliss P.Z.,	9·8 mag.
Stone 1873·9,	7·7 ,,
,, 1877·9,	7·3 ,,
C.P.D.,	8·7 ,,
Cape :—1899, Dec. 7,	8·5 ,,
1900, Jan. 5, Feb. 4, Mar. 5,	8·5 ,,
1902, Apr. 13,	8·5 ,,

$2^h\ 32^m\ 55^s$ $-42°\ 27'$

From Cor. DM., vol. 3 p. xxii.

C.P.D.,	8·9 mag.
Cordoba :—1890, Oct. 31,	9·5 ,,
,, Nov. 7,	9·0 ,,
1897, Dec. 21,	10·0 ,,
Cape :— 1902, Feb. 20, Mar. 5,	9·0 ,,

$2^h\ 56^m\ 4^s$ $-46°\ 53'{\cdot}5$

This appears in the list of Suspected Variable Stars on p. xxx. of the third vol. of Dr Thome's Durchmusterung.
The evidence is as follows :—
Z.C., G.C., C.P.D., Photometry :—*Nil.*
Cordoba :—1894, Oct. 22, no visto.
1896, Jan. 13, 7·5 mag.
1898, ,, 22, 9·5 ,,

	mag.		mag.
Cape :—1901, Mar. 15,	9·7	1901, June 12,	9·2
,, ,, 23,	9·6	,, ,, 29,	9·6
,, ,, 30,	9·8	,, July 10,	9·6
,, Apr. 27,	9·7		

C. du Ciel plate 2267, 9·6 mag.
No 10th mag. star was seen at $2^h\ 58^m\ 18^s$ $-46°\ 45'$ = Cor. DM. $-46°$, No. 899.

$3^h\ 0^m\ 12^s$ $-40°\ 11'{\cdot}2$

On C. du C. plate No. 5121 = 9·8 mag. On edge of another plate, missing.

	mag.		mag.
Cape :—1902, Jan. 30,	10·0	1902, Feb. 19,	10·3
,, Feb. 1,	10·5	,, Mar. 2,	10·3
,, ,, 8,	10·3	,, ,, 4,	10·3
,, ,, 15.	10·4	,, ,, 14,	10·3
,, ,, 17,	10·3		

$3^h\ 24^m\ 39^s$ $-26°\ 56'{\cdot}1$

Kapteyn :—On both *m.* and *c.* there is some nebulosity here. On *m.* pretty extensive and dense, on *c.* small and faint. Is there really something in the sky here? Not in Dreyer.
Cape :—1899, Oct. 27. *Nil.*—slight moon.

$4^h\ 45^m\ 17^s$ $-68°\ 14'{\cdot}9$

C.Z.,	9·0 mag.
C.P.D.,	7·9 ,,
C.G.A.,	8¼ ,,
Brisbane,	7 ,,
Gilliss P.Z.,	8·0 ,,
Cape 1880.,	6·7 ,,
Cape :—1899, Jan. 6,	7·8± ,,

$4^h\ 45^m\ 39^s$ $-45°\ 22'{\cdot}7$

In the list of Suspected Variable stars in Dr Thome's Cordoba Durchmusterung, vol. 3 p. xxviii. on the following evidence :—

Z.C.,	9·5 mag.
C.P.D.,	8·2 ,,
Cordoba :—1896, Mar. 14,	8·0 ,,
,, ,, 16,	8·7 ,,
1897, Apr. 3,	9·7 ,,
1898, Mar. 14,	8·3 ,,

This is the double star *h* 3694.

Cape :— 1901, Mar. 25,	8·1 mag., yellow 4.
,, ,, 30,	8·3 ,,
,, Apr. 4,	8·0 ,,
,, ,, 27,	8·3 ,,

$5^h\ 6^m\ 41^s$ $-44°\ 58'$

C.Z. V. 243. The large p.m. star.

Cape :—1897, Feb. 2,	8·3 mag., full yellow.
,, ,, 4,	8·3 ,, orange 4.
,, ,, 15,	8·0 ,,

$5^h\ 24^m\ 11^s$ $-64°\ 28'{\cdot}6$

C.Z. V. 864.

C.Z.,	6·5 mag.
C.G.A.,	9·5 ,,
Gilliss (*y*),	9·0 ,,
C.P.D.,	8·8 ,,
Cape :—1899, Jan. 7,	8·8 ,,
,, Feb. 26,	8·8 ,,
,, Mar. 19,	8·8 ,,

$5^h\ 29^m\ 46^s$ $-47°\ 44'{\cdot}6$

In Dr Thome's list of Suspected Variable Stars, vol. 3 page xxxii. of the Cordoba DM.
The evidence is :—
C.P.D. 8·8 mag.

	mag.		mag.
Cordoba :—1894, Dec. 17,	8·5	1896, Feb. 11,	9·5
,, ,, 19,	9·0	1897, Jan. 28,	9·7
1896, Feb. 10,	9·0	1898, Mar. 24,	8·5

Looked up on the Carte du Ciel plates :—

No. 919,	9·2± mag.
,, 1166,	9·2± ,,
,, 2258,	9·2± ,,
,, 4028,	8·8± ,,

[OVER.

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and visually

Cape :—1901,	Mar.	13,	9·0	mag.	
,,	,,	23,	8·6	,,	yellow 4.
,,	,,	25,	8·8	,,	
,,	,,	27,	8·8	,,	colour 3.
,,	,,	30,	8·5	,,	,, 6.
,,	Apr.	4,	8·45	,,	
,,	,,	11,	8·8	,,	colour 5.5.
,,	,,	27,	8·7	,,	
,,	June	9,	8·9	,,	

$6^h\ 23^m\ 6^s{\cdot}8$ $-44^\circ\ 54'{\cdot}7$

Is C.P.D. −44° No. 898.
C.Z. VI., 1076, mag. 9·0 is $2^s{\cdot}5$ *f.* and o″·2 N.
C.P.D., 1890, Mar. 5, 9·6 mag.
C. du Ciel plate, 981, 9·4 ,,
,, ,, 1119, 9·6 ,, (edge).
,, ,, 2376, 9·3 ,,
,, ,, 2436, 9·4 ,,
,, ,, 2484, 9·2 ,,
,, ,, 5711, 9·6 ,,

Not in the Cordoba DM.

			mag.				mag.
Cape :—1900,	Feb.	8,	8·9	1900,	Apr.	28,	9·7
,,	Apr.	3,	9·6	,,	May	6,	9·7
,,	,,	7,	9·6				

The observation of 1900, Feb. 8 is evidently erroneous.

$6^h\ 51^m\ 36^s$ $-51^\circ\ 31'{\cdot}8$

From Dr Thome's list of Suspected Variable Stars, Cor. DM., vol. 3 p. xl., viz. :—

C.P.D.,			8·3 mag.
Cordoba :—1894,	Nov.	23,	9·0 ,,
1895,	Jan.	19,	9·0 ,,
1896,	Mar.	11,	8·0 ,,
,,	,,	12,	7·7 ,,
1898,	Apr.	16,	9·1 ,,

			mag.				mag.
Cape :—1901,	Mar.	13,	8·3	1901,	May	22,	9·0
,,	Apr.	8,	8·7	,,	,,	27,	8·6
,,	,,	27,	8·9	,,	June	8,	8·8
,,	May	3,	8·8	,,	,,	9,	8·6
,,	,,	5,	8·8	,,	,,	12,	8·7
,,	,,	15,	8·6	,,	,,	14,	8·6
,,	,,	17,	8·7	,,	,,	15,	8·8
,,	,,	19,	8·8	,,	Aug.	9,	8·8

$7^h\ 6^m\ 57^s{\cdot}2$ $-45^\circ\ 22'{\cdot}5$

C.Z.,			7·5 mag. but misprinted 9·5.
C.P.D.,			7·6 ,,
Cape :—1898,	May	13,	7·8 ,,
,,	,,	15,	7·8 ,,
,,	June	2,	7·8 ,,
,,	,,	8,	7·8 ,,

$7^h\ 25^m\ 41^s$ $-44^\circ\ 30'{\cdot}1$

From Dr Thome's list of Suspected Variable Stars, Cor. DM., vol. 3 p. xxvi., where the observations recorded are :—

1895,	Apr.	24,	9·5 mag.
1896,	,,	9,	no visto.
,,	,,	18,	,,
1899,	Jan.	14,	9·7 mag.
Cape :—1901,	Apr.	15,	No star, $<12{\cdot}0$,,
,,	,,	27,	,, $<11{\cdot}7$,,
,,	May	5,	,, $<12{\cdot}5$,,
,,	June	9,	,, $<12{\cdot}0$,,
,,	Aug.	27,	,, $<10{\cdot}5$,,

$7^h\ 41^m\ 49^s$ $-41^\circ\ 53'{\cdot}5$

This is W Puppis.
C. du Ciel plate 873, 9·3 mag.
,, ,, 950, 11·0 ,,
Cape :—1897, Feb. 5, 8·9 ,, redness 7.

$7^h\ 55^m\ 35^s{\cdot}1$ $-43^\circ\ 16'{\cdot}4$ 9·6 mag.

36·6	16·4	10·2 ,,
38·6	16·6	9·8 ,,

This small C.P.D. triple was looked for and found, the visual magnitudes are about 9·2, 10·0 and 9·4 respectively.

$8^h\ 4^m\ 12^s$ $-44^\circ\ 32'{\cdot}6$

In Dr Thome's list of Suspected Variable Stars, Cor. DM., vol. 3 p. xxvii.
The evidence advanced by Dr Thome is as follows :—

C.Z.			8·5 mag.
C.P.D.			8·4 ,,
Cordoba :—1894,	Feb.	1,	9·3 ,,
1896,	Apr.	18,	no visto.
1898,	,,	14,	9·0 mag.

The star was looked for on the Carte du Ciel plates and found viz. :—

Plate 1058,			8·4 mag.
2426,			8·4 ,,
5753,			8·4 ,,

and visually

Cape :—	1901,	Apr.	15,	8·6 ,,
	,,	,,	27,	8·5 ,,
	,,	May	16,	8·6 ,,

$8^h\ 7^m\ 10^s{\cdot}9$ $-35^\circ\ 23'{\cdot}2$

This star is contained in the list of Suspected Variable Stars in the Cor. DM., vol. 2 p. xv.
Old observations :—

Washington Zones,	1849,	Mar.	7,	7 mag.
C.Z.,				6·5 ,,
C.G.A.,				9 ,,
C.P.D.,				8·1 ,,
Cordoba,	1890,	Apr.	21,	8 ,,
,,	1891,	Jan.	7,	7·3 ,,
,,	1893,	,,	,,	7·5 ,,

Cape observations :—

			mag.	
1896,	Nov.	19,	8·8	
,,	Dec.	18,	7·7	orange-red.
,,	,,	21,	7·7	

These three observations were made without a map of the region, and are considered uncertain.

1897.	mag.		1897.	mag.	
Jan. 31,	6·9		May 4,	7·0	yellow.
Feb. 5,	7·0		,, 10,	7·15	
,, 28,	7·3		June 1,	7·0	
Mar. 4,	7·3		,, 12,	7·3	
Apr. 3,	7·3	orange.	July 2,	7·1	
,, 5,	7·3	,,	Dec. 4,	7·0	

$8^h\ 13^m\ 3^s{\cdot}1$ $-35^\circ\ 41'{\cdot}3$

This star is contained in the list of Suspected Variable Stars in the Cor. DM., vol. 2 p. xv.
Old observations :—

Washington Zones,	1849,	Mar.	19,	8 mag.
,,	,,	,,	22,	7 ,,
C.P.D.,				7·5 ,,
Cordoba,	1890,	May	9,	7·5 ,,
,,	1891,	Jan.	7,	7 ,,
,,	1893,	,,	,,	$6\frac{3}{4}$,,

Cape observations :—

1896.	mag.		1897.	mag.
Dec. 18,	6·8	orange.	Apr. 5,	7·0
,, 21,	7·7		May 4,	6·9
1897.			,, 10,	7·0
Jan. 31,	7·5		June 1,	6·9
Feb. 5,	7·3		,, 12,	7·0
,, 28,	7·25		July 2,	6·95
Mar. 4,	7·2		Dec. 4,	7·0
Apr. 3,	7·0			

$8^h\ 16^m\ 8^s$ $-45^\circ\ 52'{\cdot}7$

Taken from Dr Thome's list of Suspected Variable Stars in the Cor. DM., vol. 3 p. xxix., where the following evidence of variability is given :—

C.Z.,				$8\frac{1}{2}$ mag.
C.P.D.,				8·8 ,,
Cordoba :—1894,	Feb.	2,	8·5	,,
,,	,,	,,	4, 9·3	,,
,,	,,	,,	6, 9·7	,,
,,	,,	May	23, 8·7	,,
,,	[1894],	Feb.	23, 9·5	,,
,,	1898,	Apr.	17, 9·5	,,
Cape :—	1901,	,,	17, 8·8	,,
,,	,,	,,	27, 8·9	,,
,,	,,	May	16, 8·8	,,
,,	,,	July	12, 8·9	,,

$8^h\ 36^m\ 38^s$ $-45^\circ\ 19'$

C.P.D.,			8·6	mag.
Cor. DM.,			8·3	,,
Cape :—1897,	Dec.	4,	8·0	,, yellow.
,,	,,	10,	7·85	,, ,,
,,	,,	17,	7·75	,, ,, 6.
,,	,,	23,	7·7	,, ,,
,,	,,	26,	7·7	,,
1898,	Jan.	2,	7·8	,,
,,	,,	5,	7·8	,,
,,	,,	15,	7·7	,,
,,	,,	21,	7·7	,,
,,	Feb.	7,	7·7	,,

$8^h\ 38^m\ 9^s{\cdot}2$ $-41^\circ\ 11'{\cdot}7$ 9·4 mag.

Kapteyn :—Triple.
Cape :—1899, Oct. 27. Seen, two of the stars are faint.

$8^h\ 45^m\ 47^s{\cdot}7$ $-41^\circ\ 15'{\cdot}5$ 9·4 mag.

48·7	15·2	8·8 ,,
49·2	15·1	9·2 ,,

Kapteyn :—Coarse triple.
Cape :—1899, Oct. 27. Seen.

$8^h\ 50^m\ 54^s{\cdot}5$ $-48^\circ\ 54'{\cdot}0$ 9·6 mag.

54·4	53·7	9·4 ,,
56·4	54·1	9·5 ,,

Kapteyn :—Triple.
Cape :—1899, Oct. 27. Seen, 8·9 yellow, 9·2 and 9·5 mag. respectively.

$9^h\ 8^m\ 4^s$ $-43^\circ\ 37'$

In Dr Thome's list of Suspected Variable Stars, Cor. DM., vol. 3 p. xxv.
The only observations are :—

Cordoba :—1895,	Jan.	19,	10 mag.
1896,	Apr.	15,	8 ,,
1897,	May	31,	inv.
1899,	Jan.	17,	,,
Cape :—	1901,	Mar.	13, 10·7± mag.
,,	,,	,,	25, $<10{\cdot}5$,,
,,	,,	Apr.	8. Two small stars near the position 10·5 and 11·0 mag., 8″ apart.
,,	,,	May	15. A very small double there 11 and 11·5 mag.
,,	,,	July	12. Small double here 11 and 11·5 mag.

C. du Ciel plates. Uncertain traces.

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$9^h\ 15^m\ 35^s$ $-46°\ 24'·4$

In Dr Thome's list of Suspected Variable Stars, Cor. DM, vol. 3 p. xxxi.
The observations quoted there are:—
Cordoba:—1894, Feb. 6, no visto.
,, May 24, 9·5 mag.
1895, Feb. 14, no visto.
,, ,, 15, ,,
1896, Apr. 16, 9·7 mag.
1899, Feb. 2, inv.
Cape observations:—
1901, Mar. 13, <11·0 mag.
,, ,, 23, <12·0 ,,
,, May 15, <12·0 ,,
,, July 12, <12·5 ,,
C. du Ciel plates,
No. 991, No star.
,, 3500, No trace whatever.

$9^h\ 15^m\ 47^s$ $-19°\ 17'·1$

	mag.
Schönfeld,	9·5 mag.
C.P.D.,	10·7 ,,

	mag.		mag.
Cape:—1900, Jan. 31,	10·5	1900, May 6,	10·9
,, Feb. 14,	10·5	1901, Feb. 26,	10·5
,, Mar. 30,	9·9	,, June 14,	10·6

This star must surely have faded in magnitude since Schönfeld's observation.

$9^h\ 39^m\ 56^s$ $-23°\ 25'·1$

C.P.D. $-23°$, 4680.
This star is in the field with the variable star 3482 RR Hydræ and was suspected of a slight variation itself. Taking as the comparison star, a star of the 8·7 mag. which is 8′ S. *pr.* we have:—

	mag.		mag.
Cape:—1898, Mar. 10,	8·9	1898, Nov. 30,	8·9
,, ,, 14,	9·0	,, Dec. 31,	8·9
,, ,, 25,	9·0	1899, June 10,	8·65
,, Apr. 13,	9·0	,, Sept. 30,	8·9

$10^h\ 10^m\ 33^s$ $-67°\ 22'·2$

C.P.D. $-67°$, No. 1240, 9·9 mag.
Through a mistake in the C.Z. this star was originally identified as C.Z. X. No. 773, a star which is really identical with C.Z. X. 782, hence the following observations:—

	mag.		mag.
Cape:—1899, Feb. 20,	10·0	1899, July 28,	10·0
,, ,, 26,	10·0	1900, Jan. 6,	10·0
,, Apr. 2,	10·0	,, ,, 16,	10·0
,, May 19,	10·0	,, ,, 29,	10·0
,, ,, 31,	10·0	,, Feb. 8,	10·0
,, June 10,	10·0	,, June 26,	9·9
,, ,, 24,	10·0	1901, Feb. 26,	10·0
,, ,, 30,	10·0	,, Mar. 30,	9·9
,, July 12,	10·0		

$10^h\ 10^m\ 36^s$ $-70°\ 26'·2$

C.P.D. $-70°$, No. 1000, 7·9 mag.
Cape:—1900, Sept. 15, 7·9 mag.
1901, Mar. 13, 8·0 ,, colour o.

$10^h\ 11^m\ 20^s$ $-67°\ 36'·6$

C.Z., = 8·5 mag.
C.P.D., = 9·4 ,,
Cape:—1900, Jan. 6, 9·5 mag.
,, ,, 16, 9·0 ,,
,, ,, 27, 8·9 ,, red 6.
,, ,, 31, 8·8 ,,
,, Feb. 3, 8·9 ,,
,, ,, 8, 8·75 ,,
,, ,, 14, 8·8 ,,
,, ,, 20, 8·7 ,, red 8.
,, ,, 26, 8·9 ,,
,, Mar. 6, 9·3 ,,
,, ,, 8, 8·9 ,,
,, ,, 10, 8·8 ,,
,, ,, 16, 9·0 ,,
,, ,, 22, 8·8 ,,
,, ,, 27, 8·8 ,,
,, Apr. 16, 9·0 ,,
,, June 26, 9·1 ,,
1901, Feb. 26, 8·75 ,,
,, Mar. 30, 8·75 ,,

$10^h\ 29^m\ 51^s·9$ $-42°\ 24'·4$

This star appears in Dr Thome's list of Suspected Variable Stars in the Cor. Durchmusterung, vol. 3 p. xxii., on this evidence:—
C.Z., 8·5 mag.
C.P.D., 8·3 ,,

	mag.		mag.
Cordoba:—1890, June 17,	8·5	1898, Apr. 23,	8·5
1891, Feb. 7,	10	1899, Jan. 18,	8·9
1894, Jan. 29,	9·5		

The Cape observations are:—
1901, Apr. 10, 8·5 mag.
,, June 14, 8·7 ,,

$10^h\ 31^m\ 38^s·3$ $-43°\ 2'·6$

This star is taken from the same list as the foregoing star (p. xxv. *loc. cit.*).
C.Z., 8·5 mag.
C.G.A., 7·5 ,,
C.P.D., 8·3 ,,

	mag.		mag.
Cordoba:—1894, Jan. 29,	9	1899, Feb. 4,	8·9
1895, ,, 19,	9·7		

and

	mag.		mag.
Cape:—1901, Apr. 15,	8·3	1901, June 14,	8·0

$10^h\ 43^m\ 59^s·8$ $-42°\ 35'·6$

Another star from the list of Suspected Variable Stars in the Cor. DM., vol. 3 p. xxiii. The evidence of variability is as follows:—
In no catalogue.

	mag.		mag.
Cordoba:—1892, Feb. 6,	7·5	1895, Feb. 27,	9·7
1894, Jan. 29,	10	1899, Jan. 18,	10

Cape photo plates Nos. 3514 and 3571, show a small pair of stars here and confirm the visual observation which follows:—
1901, Apr. 11, 10·5 and 11·5 mag., 45° ±, 10″ ±.

$10^h\ 45^m\ 32^s·8$ $-42°\ 12'·6$

A suspected variable star (Cor. DM., vol. 3 p. xxiii.)
Cordoba:—1891, Feb. 6, inv.
1894, Jan. 29, 9·7 mag.
1895, Feb. 27, inv.
1897, Apr. 24, ,,
1899, Jan. 18, 9·9 mag.

The observation of 1891 can hardly mean that the star was looked for and not seen—it probably means that the star was not recorded as the result of the night's work—it may be assumed that the existence of a star there was unknown until 1894.
Cape photo plates Nos. 3514 and 5229 shew a star of about 12th mag. near the position.
Cape:—1901, Apr. 11, 12·5 mag. ?
No 10th mag. star was seen at $10^h\ 45^m\ 28^s·4$ — $42°\ 6'·3$. Cor. DM. $-42°$, No. 6529 on the above date. The stars Cor. DM. $-42°$ Nos. 6528 and 6532 are coarse double stars.

$10^h\ 59^m\ 2^s·5$ $-45°\ 25'·7$

A suspected variable star (Cor. DM., vol. 3 p. xxix.)

	mag.
C.Z.,	8·0 mag.
C.P.D.,	7·9 ,,

		mag.
Corboba:—	1894, Mar. 1,	9·3 ,,
	,, Apr. 3,	8·5 ,,
	1895, Jan. 21,	9·3 ,,
	1899, Feb. 10,	7·8 ,,
Cape observations:—	1901, Apr. 21,	8·0 ,,
	,, June 14,	7·8 ,,

$11^h\ 1^m\ 31^s·6$ $-35°\ 37'·0$

A suspected variable from the same Cordoba list (*loc. cit.* p. xxix.)

		mag.	
C.P.D.,		9·1 mag.	
Cordoba:—	1894, Mar. 1,	9·5 ,,	
	,, Apr. 3,	8·3 ,,	
	1895, Jan. 23,	9·3 ,,	
	1899, Mar. 7,	8·5 ,,	
Cape:—	1901, Apr. 21,	8·9 ,,	yellow 4.
	,, June 14,	8·7 ,,	,, 4.

$11^h\ 9^m\ 40^s$ $-41°\ 56'·2$

	mag.
Brisbane,	7·0 mag.
Taylor,	7·8 ,,
Cor. DM. and C.G.A.,	7·4 ,,
C.P.D.,	8·0 ,,
Cape:—1877,	7·0 ,,
,, 1897,	9·0 ,,
,, 1902, Mar. 6, 14, 15, 17, 20, 24,	7·5 mag. to 7·7 ,,

$11^h\ 18^m\ 50^s·9$ $-44°\ 2'·3$

In Dr. Thome's list of Suspected Variable Stars in the Cordoba Durchmusterung, vol. 3 p. xxvii., where the following evidence of variability is given.
Cordoba:—1894, Jan. 31, no visto.
,, Feb. 1, ,,
,, ,, 28, 9·3 mag.
1895, Mar. 19, no visto.
1899, Feb. 10, 10 mag.
The Cape observations are:—
1901, Mar. 13, 10·5 mag.
,, ,, 22, 10·3 ,,
,, June 14, 10·4 ,,

$11^h\ 34^m\ 40^s·4$ $-43°\ 27'·8$

From the same list as the above star (*loc. cit.* p. xxv.).

		mag.
C.P.D.,		8·8 mag.
Cordoba:—	1894, Jan. 30,	7·5 ,,
	,, ,, 31,	8·3 ,,
	1895, Apr. 13,	9·3 ,,
	1899, Feb. 5,	9·3 ,,
Cape:—	1901, Apr. 15,	9·0 ,,
	,, July 21,	8·9 ,,

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$11^h\ 41^m\ 13^s{\cdot}1 \quad -33^\circ\ 12'{\cdot}2$

In the list of Suspected Variable Stars, Cor. DM., vol. 2 p. xxii, inserted on the following evidence.

Cordoba :— 1888, Feb. 14, 8·0 mag.
1889, ,, 24, 6·7 ,,
,, Mar. 4, 7·0 ,,
1892, July 14, 7·5 ,,
Cape observations :—1896, Aug. 25, 7·0 ,,
1897, Feb. 13, 7·5 ,,
,, Mar. 15, 7·0 ,, orange.

This star is 8·8 mag. in the C.P.D.

$12^h\ 4^m\ 36^s \quad -63^\circ\ 46'$

This star appears in no catalogue, but it does not seem to be variable.

Cape :—1901, Aug. 18, 9·0 mag. colour 9.
,, ,, 24, 8·9 ,, ,, 8.
,, ,, 30, 9·2 ,,
,, Sept. 6, 9·0 ,, ,, 8.
,, ,, 14, 9·1 ,, ,, 9.
,, Oct. 29, 9·2 ,,

Means : 9·1 mag. colour 8·5.

$12^h\ 8^m\ 16^s \quad -63^\circ\ 45'{\cdot}9$

Bris., 8·0 mag.
C.Z., 9·0 ,,
C.G.A., 9 0 ,,
C.P.D., 7·8 ,,
Cape :—1901, Aug. 18, 8·7 ,,

$12^h\ 8^m\ 28^s{\cdot}4 \quad -42^\circ\ 5'{\cdot}1$

From Dr. Thome's list of Suspected Variable Stars, Cor. DM., vol. 3 p. xxiii., where the following magnitudes are recorded.

C.P.D., 10·0 mag.
Cordoba :—1890, June 17, 8·0 ,,
1891, Feb. 6, 10·0 ,,
1895, Mar. 28, inv.
1897, May 29, 9·4 ,,
1899, Feb. 6, 10·0 ,,
Cape :— 1901, Mar. 13, 10·5 ,,
,, ,, 22, 10·8 ,,
,, July 21, 10·0 ,,
,, ,, 27, 10·2 ,, looks double.
,, Aug. 9, 10·0 ,,

$12^h\ 11^m\ 48^s \quad -50^\circ\ 24'\ 8$

From Dr. Thome's list of Suspected Variable Stars, Cor. DM., vol. 3 p. xxxix., where the following magnitudes are recorded :—

C.P.D., 10·0 mag.
Cordoba :—1894, Mar. 9, 9·5 ,,
,, ,, 10, no visto.
1895, Feb. 22, ,,
1898, Aug. 16, inv.

The Cape observations are :—
1901, Mar. 13, 10·6 mag.
,, ,, 22, 10·8 ,,
,, July 21, 11·0 ,,
,, ,, 27, 10·5 ,,

$12^h\ 13^m\ 21^s{\cdot}4 \quad -40^\circ\ 39'{\cdot}4$
$13\ \ 23{\cdot}4 \qquad\quad 39{\cdot}9$

Kapteyn :—On the two plates the position of the *comes* relative to the bright star is slightly different. Is the *comes* a false object or what is the cause of this ?

Looked up on Carte du Ciel plates Nos. 2609 and 5307—both stars shewn but no relative change noticeable.

$12^h\ 22^m\ 12^s \quad -47^\circ\ 10'{\cdot}8$

From Dr Thome's list of Suspected Variable Stars, Cor. DM., vol. 3 p. xxxiii., where the following evidence is given :—

C.Z., 9·0 mag.
C.P.D., 9·6 ,,
Cordoba :—1894, Mar. 7, 9·7 ,,
1895, Apr. 20, 10 ,,
1899, Mar. 8, 8·9 ,,
Cape observations :—
1901, Mar. 15, 9·0 ,,
,, ,, 22, 9 0 ,,
,, July 21, 9·0 ,,

$12^h\ 22^m\ 45^s \quad -1^\circ\ 44'{\cdot}3$

B.D. —1°, No. 2674, 7·7 mag.
A.G.C. No. 3422, 7·5 ,,
Cape observations :—
1898, Apr. 4, 7·0 ,,
,, ,, 7, 7·0 ,,
,, ,, 13, 6·6 ,,
,, ,, 20, 6·7 ,,

Comparison stars not well situated.

This star was found brighter than 7·7 mag. by Mr Löwinger with the heliometer, hence its examination.

$12^h\ 26^m\ 27^s{\cdot}6 \quad -46^\circ\ 5'{\cdot}8$

From Dr Thome's list of Suspected Variable Stars, in the Cordoba Durchmusterung, vol. 3 p. xxxi., where the following evidence of variability is given :—

C.P.D., 8·7 mag.
Cordoba :—1894, Mar. 13, 8·7 ,,
1895, Mar. 19, no visto.
1899, Mar. 6, 9·3 mag.
Cape observations :—
1901, Apr. 11, 9·0 mag.
,, July 21, 9·0 ,,

$12^h\ 32^m\ 30^s \quad -67^\circ\ 22'$

In no catalogue—position by alignment.

Cape :—1901, July 19, 9·4 mag.
,, ,, 27, 9·6 ,,
,, Aug. 11, 9·5 ,,

$12^h\ 33^m\ 12^s \quad -69^\circ\ 2'{\cdot}0$

Cape :—1901, July 16, 9·4 mag.
,, Aug. 19, 9·4 ,,

This star which does not appear in the C.P.D. is closely S. *pr.* the fainter star C.P.D. —69°, No. 1691, 9·6 mag.

$12^h\ 47^m\ 30^s{\cdot}4 \quad -45^\circ\ 27'{\cdot}0$

From Dr Thome's list of Suspected Variable Stars in the Cor. DM., vol. 3 p. xxix., where the following evidence of variability is given :—

C.P.D., 9·2 mag.
Cordoba :—1894, Mar. 1, 9·0 ,,
1895, Feb. 24, no visto.
1898, Apr. 24, 9·3 mag.
Cape observations :—
1901, Apr. 21, 8·9 mag.
,, July 21, 9·0 ,,

$13^h\ 10^m\ 16^s{\cdot}8 \quad -42^\circ\ 16'{\cdot}1$

From Dr Thome's list of Suspected Variable Stars (Cor. DM. 3 p. xxiii.) viz. :—

C.Z., 8·0 mag.
C.G.A., 8·25 ,,
C.P.D., 7·8 ,,
Cordoba :—1889, Apr. 28, 7·5 ,,
,, ,, 29, 8·0 ,,
,, May 2, 8·0 ,,
1894, Mar. 28, 9·0 ,,
1895, May 23, 8·7 ,,
1899, Mar. 7, 9·0 ,,
Carte du Ciel Plates
No. 1450, 8·1± ,,
,, 5369, 8·1± ,,
and visually
Cape :—1901, Apr. 11, 8·9 ,, yellow 3.

$13^h\ 12^m\ 17^s \quad -42^\circ\ 26'{\cdot}6$

From the same list as the prec. star. The Cordoba observations are :—

1889, Apr. 28, 9·0 mag.
1894, Mar. 28, 10·0 ,,
1895, May 23, 9·7 ,,
1899, Mar. 7, 10·0 ,,
Carte du Ciel Plate
No. 1450, 10·5 ,,
,, 5369, 10·5 ,,
and visually
1901, Apr. 11, 10·0 ,,

The Cor. DM. gives two 10th mag. stars at
$13^h\ 12^m\ 5^s{\cdot}0 \quad -42^\circ\ 35'{\cdot}6$
$13\ \ 12\ \ 5\ {\cdot}2 \quad -42\ \ 34\ {\cdot}3$
respectively. Both on the plates and visually the more southern star is only seen.

It may be worth while to give the estimated magnitudes of a few stars in this region for comparison's sake.

Star.		Cor. DM.	C.P.D.	Cape.
h m s	° ′	mag.	mag.	mag.
13 9 41	−42 18·4	9·3	9·2	9·2
13 10 1	22·4	9·4	9·4	9·5
13 10 4	19·7	10·0	...	12·0
13 11 27	21·7	10·0	...	11·5
13 11 32	17·4	9·3	9·8	9·75
13 11 47	30·2	10·0	...	10·5
13 12 5	35·6	10·0	10·0	10·0
13 12 24	13·6	10·0	...	11·0
13 12 52	27·0	10·0	...	12·0
13 13 14	12·2	9·7	9·6	9·8

$13^h\ 22^m\ 29^s{\cdot}4 \quad -42^\circ\ 20'{\cdot}3$

In Dr Thome's list of Suspected Variable Stars, Cor. DM., vol. 3. p. xxiii., where the following magnitudes are given :—

C.Z., 9·5 mag.
C.P.D., 9·0 ,,
Cordoba :—1889, Apr. 28, 7·5 ,,
,, ,, 29, 8·5 ,,
,, May 2, 8·0 ,,
1894, Mar. 28, 9·3 ,,
1895, May 23, 9·3 ,,
1899, Mar. 7, 9·3 ,,
Cape observations :—
1901, Apr. 11, 9·1 ,,
,, May 16, 9·1 ,,
,, July 27, 9·0 ,,

$13^h\ 28^m\ 0^s \quad -47^\circ\ 52'{\cdot}6$

Cape :—1880, 7·0 mag.
C.P.D., 7·5 ,,
Cor. DM., 8·3 ,,
C.Z., 8·5 ,,
Cape :—1901, Mar. 24, 7·8 ,,

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$13^h\ 36^m\ 35^s$ $-51°\ 7'{\cdot}0$

From Dr Thome's list of Suspected Variable Stars in the Cor. DM., vol. 3 p. xl., where the following observations are given :—

C.P.D.,			9·2 mag.
Cordoba :—	1894,	Mar. 10,	8·5 ,,
	1897,	July 18,	9·5 ,,
	1898,	Sept. 4,	9·6 ,,
Cape observations :—	1901,	Apr. 23,	9·0 ,,
	,,	May 16,	9·3 ,,
	,,	July 27,	9·0 ,,

$13^h\ 36^m\ 51^s$ $-51°\ 39'{\cdot}5$

Cor. DM., vol. 3 p. xli., viz.—

C.P.D.,			8·8 mag.
Cordoba :—	1894,	Mar. 12,	9·3 ,,
	,,	Apr. 1,	9·3 ,,
	1897,	July 18,	9·7 ,,
	1898,	Sept. 4,	9·7 ,,
Cape observations :—	1901,	Apr. 23,	9·0 ,,
	,,	May 16,	9·25 ,,
	,,	July 27,	9·3 ,,

$13^h\ 38^m\ 35^s$ $-51°\ 5'{\cdot}0$

Cor. DM., vol. 3 p. xli., viz.—

C.Z.,			8·5 mag.
C.P.D.,			8·6 ,,
Cordoba :—	1894,	Mar. 10,	8·5 ,,
	1897,	July 18,	9·3 ,,
	,,	,, 21,	10·0 ,,
	1898,	Sept. 4,	9·2 ,,
Cape observations :—	1901,	Apr. 23,	8·8 ,,
	,,	May 16	8·8 ,,
	,,	July 27,	8·8 ,,

$13^h\ 51^m\ 48^s$ $-43°\ 5'{\cdot}6$

From Dr Thome's list of Suspected Variable Stars in the Cor. DM., vol. 3 p. xxv., where the following observations are quoted :—

C.Z.,			8·0 mag.	
C.G.A.,			7·5 ,,	
C.P.D.,			8·6 ,,	
Cordoba :—	1894,	Mar. 28,	9·0 ,,	
	,,	,, 29,	8·0 ,,	
	1895,	Apr. 21,	9·3 ,,	
	,,	May 21,	8·0 ,,	
	1898,	Apr. 24,	8·0 ,,	
Cape observations :—				
	1901,	Apr. 15,	8·8 ,,	colour 4.
	,,	May 16,	8·4 ,,	
	,,	July 27,	8·7 ,,	colour 4.

$14^h\ 7^m\ 53^s{\cdot}2$ $-52°\ 25'{\cdot}7$

C.P.D. $-52°$, No. 7102 marked :
Seen 1898, May 7, $9^m{\cdot}2$ and 10^m, $120°\pm$, $7''\pm$.

$14^h\ 7^m\ 56^s{\cdot}2$ $-52°\ 50'{\cdot}4$

C.Z.,			10·0 mag.
C.P.D.,			9 0 ,,
Cape :—	1898,	May 7,	9·0 ,,

$14^h\ 11^m\ 48^s{\cdot}7$ $-52°\ 59'{\cdot}4$

C.P.D.—52°, No. 7150,			8·7 mag.
Cape :—	1898,	May 7,	9·6 ,,
	,,	,, 13,	9·2 ,,
	,,	,, 15,	9·05 ,,
	,,	,, 19,	9·3 ,,
	,,	,, 21,	9·3 ,,
	,,	June 1,	9·3 ,,
	,,	,, 8,	9·5 ,,
	,,	Aug. 6,	9·1 ,,
	,,	Sept. 24,	9·2 ,,
	,,	Oct. 17,	9·3 ,,
	1899,	Feb. 2,	9·4 ,,
	,,	May 10,	9·5 ,,

Probably variable within small limits.

$14^h\ 13^m\ 26^s{\cdot}7$ $-52°\ 25'{\cdot}3$

C.P.D. —52°, No. 7174,			8·5 mag.
Cape :—	1898,	May 7,	9·0 ,,
	,,	,, 13,	9·2 ,,
	,,	,, 19,	9·0 ,,
	,,	June 1,	9·2 ,,
	,,	,, 8,	9·3 ,,
	,,	Aug. 6,	9·25 ,,

$14^h\ 26^m\ 16^s$ $-52°\ 41'{\cdot}7$

C.Z.,			9·5 mag.
C.P.D.,			8·8 ,,
Cape :—	1898,	May 7,	9·3 ,,

$14^h\ 37^m\ 4^s$ $-42°\ 1'{\cdot}8$

From Dr Thome's list of Suspected Variable Stars in the Cor. DM., vol. 3 p. xxiii., where the following observations are recorded :—

1889,	(Mar.)	18,	9·7 mag. (printed Mayo.)
,,	Apr.	28,	inv.
,,	,,	29,	,,
,,	May	2,	,,
1895,	May	23,	,,
1897,	June	26,	9·8 mag.
1899,	Mar.	11,	inv.

Carte du Ciel plates,
Nos. 3699 and 3700. 1895, June 14, no star.
No. 6264. 1901, Apr. 10, ,,

Cape :—	1901,	Apr. 23,	$<12·0$ mag.
	,,	May 16,	$<12·0$,,
	,,	June 14,	$<12·5$,,
	,,	Aug. 9,	$<12·0$,,
	,,	,, 26,	$<12·0$,,

$14^h\ 40^m\ 50^s$ $-58°\ 27'{\cdot}2$

C.P.D., 8·3 mag.
In no other catalogue.

As Mr R. T. Pett found this star to be brighter than 7·0 mag. on 1901, June 4, it was put on the working list.

Cape :—	1901,	June 6,	6·8 mag.	colour 5.	
	,,	,, 12,	6·7 ,,		
	,,	,, 21,	7·1 ,,	,,	6.
	,,	,, 25,	6·8 ,,		
	,,	July 9,	6·8 ,,		
	,,	,, 21,	6·8 ,,	,,	6.
	,,	Aug. 10,	6·9 ,,		
	,,	,, 18,	6·8 ,,		
	,,	Sept. 14,	7·0 ,,		
	,,	,, 19,	6·8 ,,		
	,,	,, 21,	6·7 ,,		

There are several red stars in close proximity.

$14^h\ 44^m\ 54^s$ $-44°\ 18'{\cdot}9$

From Dr Thome's list of Suspected Variable Stars in the Cor. DM., vol. 3 p. xxvii., where the observations recorded are :—

C.P.D.,			9·4 mag.
Cordoba :—	1894,	Mar. 30,	no visto.
	1895,	May 28,	9·0 mag.
	1897,	June 24,	9·6 ,,
	1899,	May 13,	9·9 ,,
Cape :—	1901,	Apr. 15,	9·5 mag.
	,,	May 16,	9·5 ,,
	,,	Aug. 11,	9·3 ,,

$14^h\ 48^m\ 5^s$ $-44°\ 23'{\cdot}6$

From Dr Thome's list of Suspected Variable Stars, Cor. DM., vol. 3 p. xxvii., where the following observations are recorded :—

C.Z.,			8·0 mag.
C.G.A.,			8·5 ,,
C.P.D.,			8·3 ,,
Cordoba :—	1894,	Mar. 30,	9·5 ,,
	1895,	May 28,	8·3 ,,
	1899,	,, 13,	9·1 ,,
Cape :—	1901,	Apr. 15,	8·9 ,,
	,,	May 16,	8·8 ,,
	,,	Aug. 11,	8·7 ,,

$14^h\ 48^m\ 21^s$ $-44°\ 36'{\cdot}8$

From Dr Thome's list of Suspected Variable Stars, Cor. DM., vol. 3 p. xxvii., where the following observations are recorded :—

C.P.D.,			9·6 mag.	
Cordoba :—	1894,	Mar. 30,	8·5 ,,	
	1895,	May 26,	9·5 ,,	
	,,	,, 28,	9·7 ,,	
	1899,	,, 13,	9·1 ,,	
Cape :—	1901,	Apr. 15,	9·0 ,,	
	,,	May 16,	9·0 ,,	colour 4.
	,,	Aug. 11,	8·8 ,,	,, 5.

$15^h\ 0^m\ 21^s$ $-44°\ 0'$

This star was put on the list at the suggestion of Mr. J. Power, as the estimates of the observers at the Cape Transit Circle had varied from $7\frac{1}{2}^m$ to $8\frac{3}{4}^m$. The star also appears in Dr Thome's list of Suspected Variables (Cor. DM., vol. 3 p. xxvii.).

C.Z.,	1873,	May 3,	8·0 mag.
,,	,,	June 14,	9·0 ,,
C.P.D.,	1890,	Aug. 5,	7·8 ,,
Cordoba :—	1894,	Mar. 29,	7·5 ,,
	1895,	May 28,	8·0 ,,
	1899,	,, 13,	8·2 ,,

Cape :—

	mag.		mag.
1901, June 22,	8·0	1901, Aug. 24,	8·0
,, ,, 25,	8·0	,, ,, 30,	8·2
,, ,, 29,	7·9	,, Sept. 6,	7·9
,, July 9,	8·2	,, ,, 14,	8·0
,, ,, 21,	8·2	,, ,, 21,	8·0
,, Aug. 8,	8·3	,, Oct. 2,	8·1
,, ,, 13,	8·2	1902, Aug. 16,	8·1
,, ,, 18,	7·9	,, ,, 17,	8·1
,, ,, 19,	8·2		

Colour, 1901, Aug. 19, Sept. 6, white o.

This star has a faint companion some distance away (10″—15″).

Five C. du C. plates give 8·0, 8·1, 8·2, 8·4, 8·4. The differences though small seem to be real.

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$15^h\ 33^m\ 18^s$ $-42°\ 7'·2$

Cor. DM. Suspected Variable Stars, vol. 3 p. xxiii.

C.P.D., 9·6 mag.

Cordoba:—1889, May 2, 9·3 ,,
,, ,, 19, 9·7 ,,
1895, ,, 22, inv.
1897, Aug. 15, 10·5 mag.

Cape:— 1901, Apr. 23, 9·6 ,,
,, May 16, 9·6 ,,
,, Aug. 12, 9·9 ,, good.
,, ,, 26, 10·0 ,,
,, Sept. 17, 9·9 ,,
,, Oct. 2, 9·8 ,,

$15^h\ 49^m\ 30^s$ $-44°\ 56'·6$

From Dr Thome's list of Suspected Variable Stars in the Cor. DM., vol. 3 where the following magnitudes are recorded:—

C.Z., 8·75 mag.
C.G.A., 9·25 ,,
C.P.D., 9·4 ,,
S.M.P., 9·6 ,,

Cordoba:—1894, June 22, 9 ,,
,, ,, 26, 8 ,,
,, July 2, 8·3 ,,
1895, May 26, 8 ,,
1899, ,, 13, 9·3 ,,

From Cape Carte du Ciel plates, we have:—

Plate, No. 1731, 9·1 mag. ±
,, ,, 2965, 9·3 ,, ±
,, ,, 5373, 9·1 ,, ±

and visually:—

1901, Apr. 23, 9·0 ,,
,, May 16, 9·0 ,,
,, June 14, 8·55 ,, colour 7.
,, ,, 15, 8·6 ,,
,, ,, 25, 8·95 ,,
,, ,, 29, 8·95 ,,
,, July 9, 8·8 ,, ,, 7.
,, ,, 12, 8·9 ,,
,, ,, 21, 9·0 ,, ,, 7.
,, ,, 24, 9·05 ,,
,, Aug. 8, 9·05 ,,
,, ,, 13, 9·0 ,, ,, 5.
,, ,, 18, 9·0 ,,
,, ,, 30, 9·05 ,,

$16^h\ 5^m\ 54^s$ $-32°\ 45'·2$

C.P.D $-32°$, No. 4102 9·8 mag.
Cor. DM. ,, ,, 11519 8·6 ,,
Cape:—1896, Sept. 3, 8·5 ,, orange.
,, ,, 7, 8·6 ,, ,,

$16^h\ 8^m\ 15^s$ $-31°\ 5'·0$

Cor. DM. $-31°$, No. 12715, 10^m, but seen as 6·7 at Cordoba on 1888, May 5.

Cape:—1899, Sept. 19, <10 mag.
,, ,, 24, inv.
1900, ,, 1, <11·0 ,,

The star 5′ N. *f.*, this position in the Cor. DM. = 10 mag. is certainly not brighter than 11·5 mag.

$16^h\ 11^m\ 12^s·5$ $-42°\ 43'·2$

From the list of Suspected Variable Stars given by Dr Thome in the Cor. DM., vol. 3 p. xxiii., where the evidence offered is as follows:—

C.P.D., 8·8 mag.

	mag.		mag.
Cordoba:—1890, Sept. 3,	9·0	1894, June 23, inv.	
1894, June 2,	9·5	1899, Mar. 11,	9·5
,, ,, 3,	8·5		

Cape:—1901, Apr. 24, 9·2 mag.
,, June 8, 9·2 ,,

$16^h\ 13^m\ 30^s·4$ $-42°\ 54'·0$

From the list of Suspected Variable Stars given by Dr Thome, in the Cor DM., vol. 3 p. xxiii., where the following results are quoted:—

C.Z., 7·5 mag.
C.G.A., 7·5 ,,
C.P.D., 7·6 ,,

	mag.		mag.
Cordoba:—1889, Apr. 30,	7·0	1895, Apr. 21,	8·0
1894, June 2,	8·3	1899, Mar. 11,	7·3
,, ,, 23,	7·7		

Cape results:—1901, Apr. 24, 7·7 mag.
,, June 8, 7·5 ,,

$16^h\ 17^m\ 29^s·2$ $-46°\ 4'·8$

C.Z., 9·5 mag.
C.P.D., 9·4 ,,
Cor. DM., 9·8 ,,
Carte du Ciel plate, No. 1786, 9·6 ,,
,, ,, ,, 3678, 9·4 ,,

	mag.		mag.
Cape:—1899, Sept. 23,	9·05	1899, Oct. 6,	9·0
,, ,, 24,	9·0	1900, Sept. 1,	8·95
,, Oct. 3,	9·0		

$16^h\ 17^m\ 54^s$ $-52°\ 11'·3$

C.P.D., 7·7 mag.
In no other catalogue.
Cape:—1901, June 12, 8·1 mag.
,, Sept. 3, 8·2 ,,

$16^h\ 25^m\ 35^s$ $-46°\ 25'·1$

From the list of Suspected Variable Stars in the Cor. DM., vol. 3 p. xxxi., where we find:—

C.Z., 10·0 mag.
C.P.D., 8·6 ,,
Cordoba:— 1894, July 3, no visto.
1897, ,, 19, ,,
,, Sept. 20, ,,
1898, Sept. 4, 10·0 mag.
Cape results:—1901, Apr. 27, 9·1 ,,
,, June 14, 8·9 ,,
,, July 23, 9·0 ,,

$16^h\ 47^m\ 8^s·8$ $-32°\ 25'·0$

From Dr Thome's list of Suspected Variable Stars, Cor. DM., vol. 2 p. xii., viz.:—

Cordoba:—1889, May 6, 7·5 mag.
,, ,, 26, 9·0 ,,
,, June 23, 9·5 ,,
1892, Aug. 26, 7·25 ,,
Cape:— 1896, Aug. 16, 7·5 ,, orange.
,, ,, 22, 7·8 ,, ,,
,, ,, 28, 7·7 ,,
,, Sept. 2, 7·6 ,, orange.
,, ,, 15, 8·0 ,,
,, ,, 23, 7·7 ,,
,, Oct. 6, 8·5 ,,
,, ,, 20, 8·5 ,,
1897, June 1, 8·0 ,,

$16^h\ 50^m\ 7^s$ $-58°\ 5'·6$

Cape T.C. 1901, July 12. Too faint.
,, ,, 1902, ,, 8. Brighter than 8 mag.
,, (7-in.) ,, ,, 11, 14, 8·4 mag.
,, ,, 16, 8·5 ,,
,, ,, 21, 27, 8·4 ,,
Further observations requisite.

$16^h\ 51^m\ 59^s·5$ $-44°\ 50'·2$

From Dr Thome's list of Suspected Variable Stars, Cor. DM., vol. 3 p. xxvii., viz.:—

C.Z., 8·0 mag.
C.G.A., 8·75 ,,
C.P.D., 8·8 ,,
S.M.P., 8·4 ,,

Cordoba:—1894, June 22, 9·0 ,,
1897, Sept. 22, 9·3 ,,
1898, May 11, 9·2 ,,

Cape:— 1901, Apr. 26, 8·2 ,,
,, June 14, 8·2 ,,

$16^h\ 53^m\ 44^s$ $-44°\ 40'·1$

From Dr Thome's list, Cor. DM., vol. 3 p. xxvii., viz.:—

C.Z., 7·5 mag.
C.G.A., 7·4 ,,
C.P.D., 7·8 ,,
S.M.P., 6·8 ,,

Cordoba:—1894, June 22, 7·7 ,,
1895, May 22, 7·5 ,,
1897, Sept. 22, 7·0 ,,
1898, May 11, 9·2 ,,

Cape:— 1901, Apr. 26, 7·2 ,, colour 5.
,, June 14, 7·5 ,, ,, 5.

$17^h\ 5^m\ 49^s$ $-39°\ 37'·0$

Lac. 7171 and as a close double star = λ 321.

Dr Gould has a note on the magnitude of this star in his *Uranometria Argentina*, p. 286.

Some of the magnitudes recorded are:—

Lacaille, 7·0 mag.
h 7·3 ,, very red, bright orange, orange.
W.Z. 1846, Apr. 6, 8·0 mag.
,, July 11, 6·7 ,,
C.Z., not observed.
Cape 1880, 6·0 mag.
C.G.A., 7·0 ,, red.
C.P.D., 7·9 ,,
See, 6·9 ,, reddish.
Cape:—1901, Sept. 19, 7·5 ,, colour 8.
,, ,, 20, 7·5 ,, ,, 7·5.

$17^h\ 7^m\ 21^s$ $-32°\ 56'·9$

From Dr Thome's list, Cor. DM., vol. 2 p. xii.:—

C.Z., 7½ mag.
C.G.A., 8½ ,,
Cordoba:—1889, May 26, 9·5 ,,
,, ,, 27, 9·0 ,,
,, Sept. 22, 9·3 ,,
1892, July 22, 7·0 ,,
C.P.D. 1888, July 25, } 9·1 ,,
,, Oct. 22, }
Cape:— 1896, Aug. 16, 8·0 ,, orange red.
,, ,, 23, 8·3 ,, orange.
,, ,, 28, 8·1 ,, red.
,, Sept. 3, 8·4 ,, very yellow.
,, ,, 7, 8·5 ,, orange.
,, ,, 15, 8·4 ,, yellow.
,, ,, 23, 8·0 ,, orange.
,, ,, 26, 8·0 ,, ,,
,, Oct. 6, 7·9 ,,
,, ,, 20, 8·3 ,,
1897, June 1, 8·0 ,, orange.
,, Sept. 5, 7·8 ,, colour 7·5.
,, ,, 18, 7·5 ,,
,, Oct. 20, 8·0 ,, colour 7.
1898, June 1, 8·0 ,, ,, 7.

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$17^h\ 7^m\ 53^s{\cdot}7$ $-40^\circ\ 43'{\cdot}3$

Suspected by Mr J. Power to be variable as observations taken at the Transit Circle ranged from $7\frac{1}{2}^m$ to 9^m.

C.Z.,		7·5 mag.	
C.P.D.,		8·7 ,,	
Cor. DM.,		8·5 ,,	
Cape (7-in.):—	1897, July 29,	8·5 ,,	
	,, Sept. 18,	8·5 ,,	
	,, Oct. 20,	8·5 ,,	yellow.
	1898, June 6,	8·5 ,,	white.
	1900, July 24,	8·7 ,,	
	,, Sept. 1,	8·4 ,,	
	,, ,, 13,	8·4 ,,	
	,, Nov. 6,	8·3 ,,	
	1901, June 14,	8·3 ,,	

$17^h\ 27^m\ 11^s{\cdot}8$ $-33^\circ\ 33'{\cdot}8$

Cor. DM.	9·3 mag.				
C.P.D.	nil.				
	mag.				mag.
Cape :—1901, Apr.	1, 9·6		1901, Apr.	24, 9·7	
,, ,,	3, 9·65		,,	May 22, 9·6	
,, ,,	10, 9·7		,,	June 8, 9·6	

$17^h\ 27^m\ 17^s$ $-33^\circ\ 39'{\cdot}2$

From Dr Thome's list of Suspected Variable Stars, Cor. DM., vol. 2 p. xiii., viz. :—

C.Z.,	8·5 mag.				
C.G.A.,	9·75 ,,				
	mag.				mag.
Cordoba :—1889, June	17, 9·3		1889, Sept.	22, 9·0	
,, July	17, 8·5		1892, Aug.	26, 9·5	
,, ,,	18, 9·5				
C.P.D.,	8·5 mag.				
Cape :—1899, Sept.	19, 8·3	,,	colour 5.		
,, ,,	24, 8·4	,,			
,, Oct.	1, 8·4	,,			
,, ,,	14, 8·6	,,			
,, ,,	29, 8·6	,,			
,, Nov.	7, 8·7	,,			
1900, Mar.	23, 8·7	,,			
,, Sept.	2, 8·2	,,			
,, ,,	18, 8·3	,,			
,, Oct.	15, 8·7	,,			
,, ,,	20, 8·8	,,			
,, Nov.	2, 8·5	,,			
,, ,,	7, 8·3	,,			
,, ,,	9, 8·4	,,			
,, ,,	19, 8·2	,,	good.		
1901, Feb.	15, 8·2	,,			
,, Apr.	1, 8·0	,,			
,, ,,	3, 8·0	,,	colour 5.		
,, ,,	10, 7·9	,,			
,, ,,	26, 8·8	,,			
,, May	22, 8·2	,,			
,, June	8, 8·0	,,			

The range of magnitude
at Cordoba = 1·25 mag.
at Cape = 0·9 ,,
almost proves variability which is probably irregular in character.

This star is S. *pr.* a remarkable group, one star of which is exceedingly red.

$17^h\ 42^m\ 36^s{\cdot}7$ $-33^\circ\ 39'{\cdot}8$

This is a wide double star first observed as such at Arequipa in 1899, by Mr Clymer :—
$215^\circ \pm 15'' \pm$ compn. = 9·6 mag.

The magnitudes of the chief star are thus recorded :—

Lacaille,	7·0 mag.
W.Z.,	9·0 ,,
C.Z.,	8·0 ,,
Cape 1880 Catalogue,	7·3 ,,
U.A., C.G.A. and Cor. DM.,	6·9 mag.
S.M.P.,	7·3 ,,
C.P.D.,	8·8 ,,

Cape :—1900, Nov.	9,	8·0 ,,	colour 6.	
,, ,,	19,	7·7 ,,	,, 5.	
,, ,,	24,	[8·2] ,,		
1901, Feb.	15,	7·9 ,,		
,, Apr.	1,	8·05 ,,		
,, ,,	26,	7·9 ,,		
,, May	22,	7·9 ,,		
,, Aug.	15,	7·85 ,,		
,, Sept.	21,	7·9 ,,		
,, Oct.	2,	7·9 ,,		

This was a U.A. naked eye star, but at present it is of course absolutely invisible to the naked eye.

$17^h\ 57^m\ 27^s$ $-27^\circ\ 50'{\cdot}6$

C.P.D. — 27°, No. 6087, 9·0 mag.
Is closely S. *pr.* Ö.A. 17576.

Cape :—1899, June	15, 9·9	mag.	
,, ,,	18, 9·8	,,	
,, ,,	19, 9·8	,,	
,, ,,	24, 9·7	,,	good.
,, ,,	26, 9·7	,,	
,, ,,	29, 9·8	,,	
,, ,,	30, 9·7	,,	
,, July	1, 9·75	,,	
,, ,,	5, 9·8	,,	
,, ,,	12, 9·7	,,	
,, ,,	17, 9·9	,,	
,, ,,	19, 9·8	,,	
,, ,,	26, 9·8	,,	
,, ,,	28, 9·9	,,	
,, Sept.	26, 9·6	,,	
,, Oct.	3, 9·55	,,	
,, ,,	22, 9·8	,,	
1900, Sept.	13, 9·8	,,	

$18^h\ 8^m\ 32^s$ $-31^\circ\ 35'{\cdot}4$

Kapteyn :—Triple ?

Cape :—1901, Aug. 9. Three stars in a line each 5″ or 6″ apart :—mags. 9·6, 10·2 and 9·9.

$18^h\ 22^m\ 26^s$ $-42^\circ\ 40'{\cdot}9$

From Dr Thome's list of Suspected Variable Stars, Cor. DM., vol. 3 p. xxiv., where the following record is given :—

C.Z.,		9·0 mag.	
C.P.D.,		9·4 ,,	
Cordoba :—1894, June	3,	8·5 ,,	
1895, May	28,	8·3 ,,	
,, Oct.	9,	8·5 ,,	
,, ,,	15,	8·0 ,,	
1897, ,,	23,	9·6 ,,	
Cape Carte du Ciel plates,			
No.	508,	9·6± ,,	
,,	1952,	9·4± ,,	
,,	2995,	10·0± ,,	
,,	4899,	9·3± ,,	

and visually

Cape :—	1901, Apr. 26,	8·5 ,,	
	,, July 10,	8·0 ,,	
	,, Aug. 9,	8·5 ,,	colour 6.
	,, ,, 19,	8·5 ,,	

$18^h\ 25^m\ 22^s$ $-42^\circ\ 41'{\cdot}0$

From Dr Thome's list of Suspected Variable Stars, Cor. DM., vol. 3 p. xxiv., where the following record is given :—

C.G.A.,	7·75 mag.
C.P.D.,	8·2 ,,
Cordoba :—1894, June	3, 7·5 mag.
1895, May	28, 6·3 ,,
,, Oct.	9, inv. ,,
,, ,,	15, 8·5 ,,
1897, ,,	23, 8·0 ,,
Cape Carte du Ciel plates,	
No.	601, 8·4 ,, }
,,	1952, 8·4 ,, } estimated.
,,	2984, 8·5 ,, }
,,	4899, 8·4 ,, }

and visually

Cape :—	1901, Apr. 26,	7·8 ,,	
	,, July 10,	7·5 ,,	
	,, Aug. 9,	8·0 ,,	
	,, ,, 19,	7·5 ,,	

$18^h\ 44^m\ 56^s$ $-21^\circ\ 17'{\cdot}1$

Markree,		8·0 mag.	
B.D.,		nil.	
C.P.D.,		10·2 mag.	
Cape :—1900, July	6,	9·4 ,,	
,, ,,	24,	9·3 ,,	
,, Aug.	1,	9·4 ,,	
,, Sept.	13,	9·4 ,,	

$18^h\ 50^m\ 56^s$ $-22^\circ\ 8'{\cdot}0$

Markree III.,	1852, Aug.	10,	8·0 mag.
B.D. Schönfeld,			8·8 ,,
C.P.D.,			9·6 ,,
Washington 8206			
,,	1868 2 obs.		no mag. recorded.
,,	1876 3 ,,		,,
Cape :—1901, July	24,		8·6 mag. red 7.
,, Aug.	9,		8·5 ,,
,, ,,	18,		8·5 ,,
,, Sept.	19,		8·5 ,, red 6.

$19^h\ 2^m\ 16^s$ $-19^\circ\ 10'{\cdot}2$

Markree,		10·0 mag.	
B.D.,		9·0 ,,	
C.P.D.,		8·4 ,,	
Cape :—1901, July	27,	9·0 ,,	
,, Aug.	9,	9·0 ,,	

$19^h\ 20^m\ 4^s$ $-42^\circ\ 21'{\cdot}9$

From Dr Thome's list of Suspected Variable Stars, Cor. DM., vol. 3 p. xxiv. :—

C.P.D.,		9·0 mag.	
Cordoba :—1890, Aug.	9,	7·5 ,,	
,, ,,	13,	6·5 ,,	
1892, Sept.	23,	7·7 ,,	
1895, Aug.	12,	8·5 ,,	
,, Oct.	15,	7·5 ,,	
1897, ,,	19,	8·2 ,,	
Cape :— 1901, Apr.	26,	8·5 ,,	colour 5.
,, June	29,	8·1 ,,	
,, July	10,	8·2 ,,	
,, Aug.	9,	8·4 ,,	

$19^h\ 35^m\ 4^s{\cdot}2$ $-41^\circ\ 6'{\cdot}3$

C.Z.,		9·5 mag.	
,,		10·0 ,,	
Cor. DM.,		8·9 ,,	
C.P.D.,		9·0 ,,	

On several Cape photo plates the magnitude is about 9·6.

Cape :—1900, Apr.	28,	8·9 mag.	
,, Sept.	13,	8·8 ,,	

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$19^h\ 35^m\ 26^s$—$20°\ 29'$

Munich,	10 mag.	
Markree,	11 ,,	
Argelander,	9 ,,	
B.D.,	8·8 ,,	
C.P.D.,	10·2 ,,	
Cape (7-in.)	8·8 ,,	red = 5.

$20^h\ 3^m\ 38^s·9$ —$44°\ 48'·0$

From Dr Thome's list, Cor. DM., vol. 3 p. xxviii., where the following magnitudes are recorded :—

Cordoba :—	1894,	July 24,	no visto.	
	,,	Aug. 4,	,,	
	,,	,, 22,	,,	
	1896,	Oct. 9,	9·7 mag.	
	1898,	July 13,	10·5	,,
Cape :—	1901,	Apr. 24,	10·5	,,
	,,	May 5,	11·0	,,
	,,	June 26,	< 10·0	,,
	,,	July 27,	11·0	,,

$20^h\ 6^m\ 54^s·4$ —$44°\ 59'·1$

From Dr Thome's list of Suspected Variable Stars, Cor. DM., vol. 3 p. xxviii., where the following evidence is recorded :—

C.Z.,			9·0 mag.	
C.P.D.,			9·8	,,
S.M.P.,			9·1	,,
Cordoba :—	1890,	Aug. 15,	9·3	,,
	1894,	,, 25,	8·7	,,
	1895,	Nov. 8,	9·5	,,
	1896,	Oct. 9,	9·3	,,
	1898,	July 13,	9·4,	,,
Cape :—	1901,	Apr. 24,	9·3	,,
	,,	May 5,	9·1	,,
	,,	June 26,	8·9	,,
	,,	July 27,	9·3	,,

$22^h\ 54^m\ 43^s$ —$30°\ 9'·6$

Closely S. *pr.* another star.

	S *pr.* star.	N *f.* star.
W.Z.,	9 o mag.	9·0 mag.
C.P.D.,	9·2 ,,	8·4 ,,
Cor. DM.,	9·5 ,,	8·9 ,,

The star N. *f.* being taken as 8·6 mag. we get.

W.Z.,			8·6 mag.	
C.P.D.,			9·4	,,
Cor. DM.,			9·2	,,
and				
Cape :—	1897,	Aug. 27,	8·7	,,
	,,	Oct. 5,	8·6	,,
	,,	,, 6,	8·5	,,
	,,	,, 23,	8·7	,,
	,,	Nov. 1,	8·8	,, orange.
	,,	,, 11,	8·7	,,
	,,	,, 15,	8·7	,, (coloured ?)
	,,	,, 17,	8·65	,,
	,,	,, 20,	8·7	,,
	,,	,, 24,	8·6	,,
Cape :—	1897,	Nov. 26	8·6 mag.	
	,,	,, 29,	8·7	,, yellow.
	,,	Dec. 2,	8·7	,,
	,,	,, 4,	8·7	,,
	,,	,, 10,	8·8	,,
	,,	,, 13,	8·7	,,
	,,	,, 17,	8·7	,, orange.
	,,	,, 18,	8·7	,, (coloured.)
	,,	,, 19,	8·7	,,
	,,	,, 23,	8·7	,,
	,,	,, 26,	8·7	,,
	,,	,, 28,	8·7	,,
	1898,	Jan. 2,	8·7	,,
	,,	,, 5,	8·7	,,
	,,	May 16,	8·6	,,
	1900,	Aug. 20,	8·7	,,

$23^h\ 9^m\ 38^s·6$ —$42°\ 53'·2$

From Dr Thome's list of Suspected Variable Stars, Cor. DM., vol. 3 p. xxiv., where the following results are quoted.

C.Z.,			8·5 mag.	
C.P.D.,			9·6	,,
Cordoba :—	1890,	Aug. 13,	9·0	,,
	1895,	Sept. 10,	8·5	,,
	,,	,, 21,	8·5	,,
	,,	Dec. 4,	9·5	,,
	1897,	Nov. 19,	9·1	,,
Cape :—	1901,	Apr. 24,	9·1	,,
	,,	May 5,	8·9	,,
	,,	June 12,	8·9	,,

$23^h\ 13^m\ 29^s$ —$35°\ 17'·2$

In Dr Thome's list of Suspected Variable Stars Cor. DM., vol. 2 p. xv., where the following observations are given.

Cordoba :—	1888,	Aug. 31,	10·0 mag.	
	1889,	,, 1,	8·0	,,
	,,	,, 19,	9·3	,,
	,,	,, 22,	9·0	,,
	1892,	Nov. 23,	8·5	,,
We also find :—				
W.Z.,			9·0	,,
C.P.D.,			9·2	,,
Cape :—	1896,	Aug. 29,	8·1	,,
	,,	Sept. 7,	8·0	,, white.
	,,	,, 23,	7·9	,,
	,,	Oct. 6,	7·9	,,
	,,	,, 29,	8·3	,,
	,,	Nov. 19,	8·0	,,
	,,	Dec. 2,	8·0	,,
	,,	,, 10,	7·6	,,
	1897,	Sept. 25,	8·3	,,
	,,	Oct. 5,	8·6	,,
	,,	Nov. 11,	7·5	,, orange.
	,,	,, 24,	8·0	,, ±
	,,	Dec. 2,	7·7	,, ±
	,,	,, 10,	7·8	,, ±
	,,	,, 18,	7·5	,, ±
	,,	,, 26,	8·0	,, ±
	1898,	Jan. 2,	7·8	,, ±
	,,	,, 5,	7·7	,, ±
	,,	May 16,	8·2	,,

$23^h\ 17^m\ 38^s$ —$4°\ 36'·7$

Cape Catalogue 1890, No. 2919.

			mag.			mag.
Cape :—	1897,	Sept. 23,	10·5	1897,	Dec. 17,	10–11
	,,	Oct. 5,	10·5	1898,	Jan. 10,	< 9·7
	,,	Nov. 11,	10·5	,,	May 16,	10·5
	,,	,, 25,	11·0			

$23^h\ 25^m\ 35^s·3$ —$44°\ 18'·1$

This star is to be found in Dr Thome's list of Suspected Variable Stars in the Cor. DM., vol. 3 p. xxviii., but it was independently put on the Cape list in 1897.

The observations found are :—

Cordoba :—	1872,	Oct. 11,	9·0 mag.	
	,,	Nov. 4,	9·0	,,
	1873,	Nov. 2,	7·5	,,
	1879,	Nov. 15,	9·0	,,
C.P.D.,			8·8	,,
Cordoba :—	1894,	Aug. 22,	8·0	,,
	1896,	Dec. 7,	no visto.	
	1897,	Nov. 21,	8·7 mag.	

			mag.			mag.
Cape :—	1897,	Nov. 24,	8·7	1898,	Jan. 19,	8·5
	,,	,, 29,	8·4	,,	,, 20,	8·7
	,,	Dec. 2,	8·4	,,	,, 21,	8·5
	,,	,, 10,	8·3	,,	,, 26,	8·7
	,,	,, 17,	8·6	,,	,, 30,	8·3
	,,	,, 18,	8·25	,,	Feb. 8,	8·4
	,,	,, 19,	8·2	,,	May 16,	8·2
	,,	,, 23,	8·4	,,	June 8,	8·05
	,,	,, 26,	8·4	,,	Aug. 8,	8·4
	1898,	Jan. 2,	8·4	,,	Sept. 21,	8·3
	,,	,, 6,	8·3	,,	,, 30,	8·2
	,,	,, 10,	8·6	,,	Oct. 22,	8·3
	,,	,, 12,	8·65	,,	Nov. 30,	8·4
	,,	,, 14,	8·7	,,	Dec. 4,	8·2
	,,	,, 15,	8·7	1901,	Aug. 27,	8·4
	,,	,, 16,	8·5			

$23^h\ 29^m\ 46^s$ —$57°\ 12'·4$

C.P.D. —57°, No. 10300, 10·2 mag.

Cape :—	1898,	July 23,	inv.	
	,,	Oct. 22,	10·0	mag.
	,,	Nov. 1,	9·9	,,

$23^h\ 53^m\ 8^s$ —$30°\ 33'·4$

Observed for colour at the request of Mr W. de Sitter.

			mag.	
Cape :—	1897,	Sept. 25,	9·2,	colour not noticeable.
	,,	Oct. 19,	9·2	
	,,	Nov. 11,	9·3	
	,,	,, 24,	9·3,	no striking colour.

$23^h\ 54^m\ 19^s$ —$28°\ 37'·2$

This star was also observed at Mr de Sitter's request to see if it was coloured.

Cape :—	1897,	Nov. 11,	7·7	mag.	white.
	,,	,, 24,	7·6	,,	,,

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OBSERVATIONS OF ? AND × STARS OF

THE CAPE PHOTOGRAPHIC DURCHMUSTERUNG. By R. T. A. INNES.

A considerable number of stars in the *Cape Photographic Durchmusterung* are marked ? or ×. On pages (17) and (18) in vol. 1 Professor Kapteyn draws attention to the precautions he has taken to exclude false objects—he then adds:—

"Doubtful cases not settled in any of these ways, and not in any of the catalogues compared, have been inserted in our Durchmusterung with a ?. It was intended at first to reject these doubtful objects if their diameter was −0, and only to insert with a ? those stars, the diameter of which was larger; but this rule has not been strictly adhered to, so that many, probably most, of the stars so marked belong in reality to the faintest objects on the plates. Comparisons with the DM. of Schönfeld and of Thome, as well as with overlapping plates, prove that nearly all, if not all, of these objects will be really found to exist in the sky. For the rest it is perhaps well to state explicitly that the uncertainty is wholly relative to the existence or non-existence of the star, and in no case relative to the correctness of the position."

As to the symbol × Professor Kapteyn says on page (96) (*loc. cit.*)

"The fact is thus notified that the star seemed somewhat nebulous. All these objects were looked for in Dreyer's Gen. Cat. of Nebulæ, and when contained in this work, were set down as nebulæ in the first column. For those not found, the sign was retained; whether in the case of some of these we have to do with stars surrounded by nebula, or only with some accidental defect of the plate, I do not venture to decide."

At Sir David Gill's request I have examined all these cases—with a few exceptions for which other proofs of existence were available—with the 7-inch refractor and find that out of the 190 stars marked with a ? all but 17 actually exist. In no case were the stars marked × seen to be nebulous, but a considerable proportion of them are small double or triple stars.

The first list of stars contains those not found here. These objects should in consequence be struck out of the C.P.D.

The second list contains all the ? and × stars in the C.P.D. with the results of examination made here.

STARS MARKED ? IN THE C.P.D. WHICH DO NOT EXIST.

C.P.D.	Mag.	1875. R.A.	1875. Dec.	Date of Search.	
		h m s	° ′		
−21° No. 7840	9·7	20 50 33	−21 5·7	6. 11. 1900	
−24 „ 6143	9·9	17 56 11	24 21·0	13. 9. 1900	
−26 „ 4041	9·4	9 39 35	26 59·6	27. 1. 1900	
−28 „ 7418	9·8	21 7 15	28 5·9	6. 11. 1900	Is ?? in C.P.D.
−30 „ 4428	9·1	16 31 45	30 19·9	12. 6. 1901	
−33 „ 3391	9·4	13 13 0	33 56·9	21. 4. 1901	
−41 „ 561	10·0	4 39 20	41 35·4	24. 11. 1900	
−57 „ 4371	9·6	11 4 54	57 22·4	8. 7. 1901	
−58 „ 625	10·0	6 6 11	58 12·4	28. 4. 1900	
„ 1823	9·7	9 58 28	58 37·9	17. 5. 1901	
−59 „ 427	9·6	5 7 9	59 41·7	28. 4. 1900	
„ 536	10·0	5 51 18	59 2·0	22. 2. 1901	
−67 „ 3620	9·5	19 1 1	67 24·3	1899	
−73 „ 660	9·8	9 50 3	73 2·0	21. 6. 1901	
−75 „ 380	9·6	6 29 18	75 39·7	22. 2. 1901	
„ 599	9·4	9 37 9	75 11·2	30. 3. 1901	
−76 „ 276	9·8	4 28 49	76 30·9	23. 11. 1900	

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LIST OF STARS MARKED ? OR × IN THE CAPE PHOTOGRAPHIC DURCHMUSTERUNG, with the Results of an Examination of the Sky.

Star.	Mag.	1875. R.A.	1875. Dec.	Mark.	Notes.
		h m s	° ′		
− 19 1435	10·2	6 40 37·4	− 19 6·6	?	Seen, $10^m·5$ (21. 4. 1901).
1666	9·9	6 57 34·0	36·9	?	,, $9^m·8$ (23. 4. 1901).
1874	10·4	7 7 12·0	37·7	?	,, $11^m·5$ (21. 4. 1901).
1936	10·0	7 10 22·7	31·7	?	,, $10^m·2$ (21. 4. 1901).
2355	10·2	7 29 9·9	26·7	?	,, $10^m·2$ (26. 1. 1900).
2877	10·4	7 50 38·9	57·3	×	,, small double ? (17. 4. 1901). Seen, very good definition, single, no trace whatever of nebulosity, $9^m·5$ (21. 4. 1901).
3666	10·4	8 32 45·1	11·7	?	Seen, $11^m·0$ (23. 4. 1901).
3759	10·4	8 38 2·9	46·7	?	,, $10^m·4$ (26. 1. 1900).
3776	10·2	8 38 56·9	37·6	?	,, $10^m·5$ (26. 1. 1900).
4058	10·4	9 12 3·0	32·7	×	,, a small pair $10^m·5$ and $11^m·0$ (27. 1. 1900).
4119	10·7	9 16 34·5	10·4	?	,, $10^m·5$ (31. 1. 1900).
4132	10·7	9 17 57·0	0·8	?	,, $10^m·0$ (31. 1. 1900).
6818	10·2	18 17 6·2	48·1	?	,, $9^m·9$ (12. 7. 1901). Seen $10^m·0$ (16. 7. 1901).
7756	10·2	20 17 23·4	16·6	?	Is $9^m·5$ in Markree Catal., vol. i. p. 17.
− 20 1865	10·3	6 56 13·1	− 20 10·0	×	Seen, a small double star, 11^m and 11^m, 10″ (3. 1. 1900).
					,, ,, ,, ,, ,, ,, (28. 4. 1900).
2259	10·2	7 15 43·3	1·1	?	,, $10^m·3$ (26. 1. 1900).
2317	10·0	7 17 44·4	37·8	?	,, $10^m·0$ (31 1. 1900).
3145	10·4	7 49 5·0	34·0	?	,, $10^m·5$, star closely S. *f.* is $9^m·8$ (26. 1. 1900).
4105	10·4	8 43 3·3	29·6	?	,, $10^m·8$ (26. 1. 1900).
4120	10·4	8 44 15·7	38·8	?	,, $10^m·7$ (26. 1. 1900).
4475	10·6	9 18 42·1	19·3	:?	,, 11^m and $11\frac{1}{2}^m$, 225° ±, 10″ ± (27. 1. 1900).
4684	10·2	9 35 48·7	7·5	?	,, $10^m·5$ (23. 4. 1901).
5727	9·8	12 58 50·2	49·3	?	,, $9^m·5$ (21. 4. 1901).
6905	10·0	18 7 10·1	18·7	?	,, $10^m·3$ (12. 7. 1901).
8263	10·0	21 55 21·4	43·7	?	,, $10^m·0$ (24. 11. 1900).
− 21 899	10·3	5 35 27·5	− 21 29·7	?	Seen, $10^m·3$ ± (23. 11. 1900).
1126	10·2	6 4 27·8	25·3	?	,, $9^m·9$, a brighter star not in C.P.D. is 2′ S. *f.* (30. 3. 1901).
1663	10·4	6 55 1·7	38·1	×	No nebulosity seen (30. 3. 1901).
2081	9·8	7 16 40·8	46·0	?	Seen, $10^m·5$ (23. 4. 1901).
2690	10·4	7 39 3·6	34·1	?	,, $10^m·0$, brightest of a small group (23. 4. 1901).
3309	10·4	8 7 50·5	29·8	?	,, $11^m·0$ (16. 2. 1901); $10^m·6$ (19. 2. 1901).
3398	9·8	8 11 48·4	1·0	?	,, $10^m·0$ (9. 2. 1901).
3913	10·5	8 40 42·1	21·6	?	,, $10^m·5$ (8. 2. 1900).
4186	10·4	9 11 37·0	22·9	?	,, $10^m·2$ (8. 2. 1900).
6538	10·0	17 52 41·0	25·4	?	,, $9^m·9$ (12. 7. 1901).
7840	9·7	20 50 33·0	5·7	?	Not seen (6. 11. 1900).
− 22 2212	10·0	7 23 31·4	− 22 17·5	?	Is in Cor. DM. at $29^s·8$, 17′·3, $9^m·9$.
3396	10·0	8 14 41·0	45·5	?	Seen, $10^m·5$ (9. 2. 1901).
[None of the above ? stars occur in the B.D.]					
− 23 3181	10·4	7 52. 2·8	− 23 37·7	?	Is in Cor. DM. at $1^s·7$, 36′·9, 10^m. Both in C.P.D. and Cor. DM. this is the S. *f.*, of 2 stars.
4980	10·3	10 29 37·7	11·6	?	Is in Cor. DM. at $37^s·2$, 11′·3, $9^m·7$.
6950	10·2	18 5 45·3	4·2	×	Is in Cor. DM. $9^m·4$ and in B.D. $9^m·3$.
− 24 6143	9·9	17 56 11·5	− 24 21·0	?	Not seen (13. 9. 1900).
− 26 4041	9·4	9 39 34·7	− 26 59·6	?	Not seen (27. 1. 1900).

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Star.	Mag.	1875. R.A.	1875. Dec.	Mark.	Notes.
		h m s	° ′		
− 28° 7418	9·8	21 7 14·8	− 28 5·9	? ?	Not seen (6. 11. 1900).
− 30 2241	9·7	8 0 25·9	− 30 5·9	?	Seen $9^m·9$, a shade fainter than star $9^s·5$ *pr.*, in about same dec. It is perhaps a small double. (27. 1. 1900).
4428	9·1	16 31 44·7	19·9	?	Not in Cor. DM. Not seen (12. 6. 1901).
6802	10·4	23 47 13·5	5·9	?	Not in Cor. DM. Seen, $10^m·3$ (9. 8. 1901). A $7^m·5$ is closely N.*f.* this position.
− 33 2302	10·0	8 31 35·8	− 33 1·0	×	Seen, double, $10^m·3$ and $10^m·3$, 225° ± 8″ ± (27. 1. 1900).
3391	9·4	13 13 0·3	56·9	?	Not in Cor. DM. No star there (21. 4. 1901).
− 34 2937	9·6	8 40 32·2	− 34 10·2	?	Not in Cor. DM. Seen 10^m, forms the *comes* of a very coarse pair (3. 5. 1900).
− 36 4076	10·6	10 0 18·7	− 36 2·0	?	There is a $10^m·5$ star sufficiently near this position, it is S.*f.* a $9^m·0$ star (9. 2. 1900). There are 2 stars $10^m·8$ and $11^m·0$ S.*f.* a $9^m·0$ star, doubtful if either is the C.P.D. star (22. 2. 1901).
− 38 8534	10·2	23 19 33·3	− 38 11·0	?	Seen, $10^m·3$ (1. 12. 1900). Not in Cor. DM.
− 39 8869	10·9	20 59 27·9	− 39 11·6	?	Seen, $10^m·5$, closely *pr.* a 7^m star (24. 11. 1900). Not in Cor. DM.
− 41 561	10·0	4 39 19·6	− 41 35·4	?	Not seen (24. 11. 1900). Not in Cor. DM.
− 42 1313	9·9	7 13 42·3	− 42 37·4	?	Is in Cor. DM., $9^m·9$.
− 43 5534	10·0	11 37 19·3	− 43 33·4	?	Is in Cor. DM. at $17^s·3$, $9^m·9$.
7289	9·8	15 39 25·2	4·5	×	In Cor. DM. $9^m·9$.
9346	10·0	20 47 13·0	24·0	?	Is in Cor. DM. $9^m·9$.
− 44 6291	9·3	13 9 17·2	− 44 2·6	×	See also C.P.D., vol. i. p. (94). This is a very red star, no nebulosity; mag. 7·2—8·1, var. ?
− 45 2018	10·4	7 57 57·5	− 45 2·8	?	Is in Cor. DM. 10^m. Seen double, $10^m·5$ and $10^m·5$, 180° ±, 5″ ± (27. 1. 1900).
7330	9·8	15 10 3·0	14·5	?	Is in Cor. DM. 10^m.
− 46 2201	9·8	8 5 33·5	− 46 56·7	?	Position near γ Argus. Not in Gould's Cordoba Photographs. Not in Cor. DM. Not seen (27. 1. 1900).
2276	10·0	8 9 25·5	38·4	×	No nebulosity seen (19. 2. 1901).
5710	10·6	12 2 56·7	53·8	?	Is in Cor. DM., 10^m.
7406	10·2	15 16 13·9	18·6	?	„ „ „ „ at $11^s·8$, 17″·8, 10^m.
8820	9·3	17 31 59·1	50·6	?	A $9^m·5$ seen at $17^h\ 32^m\ 6^s$ −46° 49′·0 ± (1. 12. 1900). But Cor. DM. has a star very near C.P.D. position, viz. $59^s·6$, 50′·6, 10^m.
− 47 4333	9·7	10 29 35·2	− 47 16·4	×	No nebulosity seen, is a small pair, 10^m and 10^m, 270° ±, 4″ ± (22. 2. 1901).
− 48 1905	9·8	8 41 23·2	− 48 21·2	: ?	Is in Cor. DM. 10^m.
− 50 1689	10·2	8 34 25·0	− 50 43·3	×	Is in Cor. DM. 10^m.
− 51 7223	10·2	14 42 14·6	− 51 5·4	?	Is in Cor. DM., 10^m.
11645	9·8	21 11 28·8	10·0	?	„ „ „ „ Seen, $9^m·4$, brighter than C.P.D. −51° No. 11644 (2. 11. 1900).
− 52 1163	9·8	7 20 25·2	− 52 32·8	?	Seen, $10^m·0$ (17. 5. 1901).
7621	10·6	14 45 57·5	30·0	?	„ $11^m·0$ (12. 6. 1901).
9806	9·9	16 16 9·3	23·0	?	„ $10^m·0$ (12 6. 1901).
− 53 463	9·6	2 35 1·3	− 53 36·4	?	Seen, $9^m·8$ (4. 2. 1900). Seen, $9^m·7$ (21. 4. 1901).
4884	9·8	11 53 42·0	− 53 35·0	?	„ $9^m·1$, colour, red = 6 (23. 3. 1901).
6141	10·1	14 43 32·2	16·0	?	„ $10^m·0$ (9. 7. 1901).
6144	10·3	14 44 9·1	1·8	×	Is a small double 270°, 10″, 11^m and $11\frac{1}{2}^m$ (9. 7. 1901).
6390	9·7	15 7 27·6	38·4	?	Seen, $9^m·8$, forms a coarse double star with an $8^m·7$ star *f.* (9. 7. 1901).

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Star.	Mag.	1875. R.A.	1875. Dec.	Mark.	Notes.
		h m s	° ′		
− 54 5797	10·0	13 47 24·1	− 54 26·8	?	Seen, 10m·0 (16. 7. 1901).
6040	10·2	14 23 13·3	39·0	?	,, 10m·3 (16. 7. 1901).
6276	10·1	14 53 26·9	0·3	?	,, 10m·0 (9. 7. 1901).
7033	10·4	15 57 14·8	42·3	?	,, 11m·0 (9. 7. 1901), 11m·0 (13. 7. 1901).
7965	10·0	16 51 6·2	29·3	?	,, 10m·5 (12. 7. 1901 and again 16. 7. 1901).
− 55 3786	9·8	10 39 23·9	− 55 59·3	?	Seen, 9m·7 (25. 6. 1901).
4427	10·0	11 26 4·5	36·3	?	,, 10m·7 (25. 3. 1901).
5030	9·9	12 16 41·0	6·4	?	,, 10m·0 (14. 7. 1901).
5449	9·7	13 7 5·1	44·9	?	,, 10m·0 (16. 7. 1901).
5750	9·8	13 41 44·6	3·4	?	,, 9m·3, a 10m·5 star is 1′ (arc) *pr.* (16. 7. 1901).
6533	10·2	15 14 55·6	41·0	?	,, 10m·2 (9. 7. 1901).
7442	10·4	16 11 3·6	40·9	?	,, 11m·5 (8. 7. 1901).
7892	10·0	16 58 16·0	6·8	×	This is a difficult triple star in the 7-inch. The chief star is 9m·6, it has one *comes* 11m·5, 360° ± 3″ ± and another 12m·0, 250° ± 5″ ± (12. 7. 1901).
− 56 5139	9·8	12 10 23·3	− 56 12·5	?	This is a 3″ ± double, 10m·5 and 11m·0 (12. 7. 1901).
9655	9·8	21 20 37·0	32·5	?	Seen, 9m·8 (2. 11. 1900).
− 57 457	10·3	2 30 59·6	− 57 21·2	?	Seen, 9m·3, it is the faintest of the 3 stars C.P.D. −57° Nos., 456, 457, 458. (4. 2. 1900).
4371	9·6	11 4 53·6	22·4	?	No star there (8. 7. 1901).
4851	9·9	11 30 13·2	5·9	?	Seen, 10m·5 (10. 7. 1901).
− 58 625	10·0	6 6 11·5	− 58 12·4	?	Not seen (28. 4. 1900).
626	10·0	6 6 17·5	13·1	?	Seen, 9m·8 (28. 4. 1900).
865	9·4	7 9 8·8	11·2	?	,, 10m·0 (28. 4. 1901).
1032	9·7	7 57 32·5	58·8	?	,, 9m·75 (17. 5. 1901).
1823	9·7	9 58 28·0	37·9	?	Not seen (17. 5. 1901).
2141	10·0	10 18 8·0	13·2	?	Seen, 10m·5, an 11m *comes* 8″ S. *f.* (25. 6. 1901).
2184	9·9	10 20 51·5	7·1	×	,, no nebulosity, is a small double star, both 11m, 4″±, 270° ± (25. 6. 1901).
3685	9·8	11 25 23·5	37·2	?	,, 10m·0 (10. 7. 1901).
4645	10·1	12 53 53·0	53·4	?	,, 9m·6 (16. 7. 1901).
8098	9·5	23 41 56·5	50·0	?	,, 9m·5; 3m *pr.* in *a* there are several stars 9m·2–9m·5 which are not found in the C.P.D. (1. 12. 1900).
− 59 267	9·8	3 14 32·5	− 59 56·8	?	Seen, 9m·7 (5. 2. 1900).
278	9·8	3 25 11·8	0·1	?	,, 9m·6 (5. 2. 1900).
285	9·6	3 37 56·5	4·1	?	,, 9m·6 (5. 2. 1900).
427	9·6	5 7 9·5	41·7	?	Not seen (28. 4. 1900).
536	10·0	5 51 18·5	2·0	?	No star so bright as 11m there (22. 2. 1901).
1259	10·0	9 2 35·2	57·6	?	Seen, 10m·0 in a group of 3 or more stars, a brighter star being 2′ N. (12. 6. 1901).
2252	9·1	10 30 29·5	16·3	×	This is a small triple star, one *comes* 10m·5, 5″ S.*p.*, the other 11m·0, 4″ N.*p.* (25. 6. 1901).
5013	10·1	13 23 21·0	16·1	?	Seen, 9m·8 (16. 7. 1901).
− 60 281	9·8	3 56 30·0	− 60 53·6	?	Seen, 9m·5 (6. 2. 1900).
1368	9·9	9 10 58·9	1·6	?	,, 9m·75, about 30″ S. of a 7m·5 star (14. 6. 1901).
6119	10·1	15 39 2·9	46·2	?	,, 11m·0 (9. 7. 1901).
7038	9·6	18 15 35·5	37·0	?	,, 9m·8, a 10m star 3′ N.*f.* (2. 11. 1900).
7270	9·2	18 59 45·5	10·2	×	Formed by the *pr.* stars, the outliers of a magnificent cluster. No nebulosity whatever seen (2. 11. 1900).
− 61 610	9·4	6 11 56·5	− 61 9·5	×	Is a ∴ group of 3 stars, 10m, 10½m and 11m, 5″ ± each in distance (19. 2. 1901).
895	9·6	7 46 47·0	2·9	?	Seen, 10m·5 (25. 4. 1901).
932	9·7	7 54 39·8	36·8	?	,, 9m·8 (25. 4. 1901).
1492	9·6	10 6 23·5	4·0	?	,, 9m·8 (21. 6. 1901).
1493	10·0	10 6 35·0	2·0	?	,, 9m·9 (21. 6. 1901).
1498	10·0	10 7 19·0	12·7	?	,, 10m·0, with an 11m·5 companion 10″ away (21. 6. 1901).

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Star.	Mag.	1875. R.A. h m s	1875. Dec. ° ′	Mark.	Notes.
− 61 2670	9·8	11 43 45·0	− 61 23·8	?	Seen, $10^{m}\cdot0$ (10. 7. 1901).
3515	10·1	13 6 2·0	59·9	?	This position is close to a $7^{m}\cdot5$ double star. The *comes*, $11^{m}\cdot5$, about 60″ S. is probably the C.P.D. star, but it is very faint (21. 4. 1901).
3814	10·1	13 26 30·0	24·1	?	Seen, $9^{m}\cdot7$ (16. 7. 1901) and (19. 7. 1901).
4137	10·0	13 45 52·5	51·9	?	„ $9^{m}\cdot9$ (16. 7. 1901).
− 62 171	10·6	2 1 7·0	− 62 31·2	?	„ $9^{m}\cdot9$ (5. 2. 1900).
251	9·6	3 0 26·0	26·3	?	„ $9^{m}\cdot7$ (5. 2. 1900).
1465	10·0	10 7 26·0	32·1	?	„ $9^{m}\cdot9$ (21. 6. 1901).
1466	9·9	10 7 27·5	31·7	?	„ $10^{m}\cdot4$ (21. 6. 1901). A similar but fainter little triangle of stars is about 7′ preceding.
1467	10·0	10 7 30·5	31·8	?	„ $10^{m}\cdot8$ (21. 6. 1901).
2612	10·2	12 4 54·5	34·1	?	„ $10^{m}\cdot0$ (10. 7. 1901).
2738	9·9	12 19 10·8	25·5	?	In the field with α Crucis, seen, $10^{m}\cdot5$ (14. 7. 1901).
5054	10·0	15 46 41·4	7·0	?	Seen, $11^{m}\cdot0$ (21. 4. 1901).
− 63 13	9·8	0 6 23·1	− 63 24·1	?	Seen, $9^{m}\cdot6$ (4. 2. 1900).
625	9·7	6 37 8·5	8·6	?	„ $9^{m}\cdot7$ (30. 3. 1901).
756	9·5	7 33 43·0	27·1	?	„ $9^{m}\cdot4$ (25. 4. 1901).
− 64 146	9·2	1 57 8·0	− 64 0·8	?	Seen, $9^{m}\cdot0$, perhaps reddish (4. 2. 1900).
600	9·7	6 38 40·5	53·8	?	„ $9^{m}\cdot7$ (24. 4. 1901).
1020	9·3	9 14 28·5	8·8	?	„ $9^{m}\cdot4$, identity a little uncertain as there are so few recorded stars amidst a host of small stars (15. 6. 1901).
3440	9·7	16 7 54·0	10·2	?	Seen, $9^{m}\cdot8$ (9. 7. 1901).
− 65 824	9·7	7 48 18·5	− 65 15·8	?	Seen, $10^{m}\cdot5$, (25. 4. 1901).
1067	9·5	9 0 40·6	2·6	?	„ $9^{m}\cdot9$, many unrecorded stars, $9^{m}\cdot8$ − $10^{m}\cdot5$ about (15. 6. 1901).
1856	9·9	12 16 40·5	13·2	?	„ $10^{m}\cdot5$ (21. 4. 1901).
2334	9·9	13 19 14·5	40·8	?	„ $9^{m}\cdot7$ (red), the brightest of a group of 3 stars (16. 7. 1901).
2748	10·0	14 20 20·0	2·3	?	„ $10^{m}\cdot5$, a shade brighter than the C.P.D. star 10^{m}, closely S.*f.* (16. 7. 1901).
− 67 433	9·6	5 26 20·0	− 67 36·0	×	Seen, $9^{m}\cdot6$ In the larger Magellanic cloud. These two stars are in a stream of nebulosity, and very faint stars.
435	9·6	5 26 31·0	35·9	×	„ $9^{m}\cdot9$ Identical with Δ 211 = N.G.C., No. 1955 (26. 11. 1900).
482	10·1	5 36 52·5	35·2	?	„ $9^{m}\cdot7$ (30. 11. 1900). Is probably same star as *h* 603, Cape Obs., p. 161.
926	10·0	8 22 24·5	57·8	?	„ $10^{m}\cdot0$ (3. 5. 1901).
1365	9·8	10 25 39·0	47·2	?	„ $9^{m}\cdot6$ (25. 6. 1901).
1595	9·8	10 50 10·0	34·9	?	„ $10^{m}\cdot5$ (25. 6. 1901).
2030	10·0	12 32 3·5	28·1	?	„ $10^{m}\cdot3$ (16. 7. 1901). Existence doubtful, many faint stars about (27. 7. 01). Seen $10^{m}\cdot5$ in a small group of faint stars (11. 8. 1901).
2435	9·9	13 47 32·0	13·9	?	Seen $10^{m}\cdot0$ (16. 7. 1901).
2928	9·4	15 28 12·5	33·2	?	„ $9^{m}\cdot8$ (9. 7. 1901).
3620	9·5	19 1 1·0	24·3	?	No star there (1899).
− 68 309	9·7	5 5 12·5	− 68 17·6	?	Not in *h*. Seen $10^{m}\cdot2$ (24. 4. 1901).
548	10·0	6 39 55·0	47·0	?	Seen, $10^{m}\cdot0$ (13. 11. 1900).
1324	9·8	10 45 13·5	35·0	?	„ $10^{m}\cdot0$ (21. 6. 1901).
1399	9·8	10 54 49·0	52·6	?	„ $10^{m}\cdot3$ (25. 6. 1901).
1728	9·6	12 34 9·0	57·1	?	„ $10^{m}\cdot0$ double, (16. 7. 1901).
2516	9·8	15 24 55·0	49·4	?	„ $10^{m}\cdot0$ (25. 6. 1901).
− 69 211	9·8	3 47 12·0	− 69 1·6	?	„ $9^{m}\cdot7$ (6. 2. 1900).
380	9·6	5 28 40·0	6·7	×	These would seem to form part of the cluster *h* 2881, but *h* makes no mention of any nebulosity.
381	9·6	5 28 41·0	6·2	×	
382	9·6	5 28 43·0	7·8	×	
2169	9·7	14 46 1·4	2·9	?	Seen, $10^{m}\cdot5$ (12. 6. 1901).
3250	10·0	22 29 47·1	12·8	?	„ a 9″ ± pair, $9^{m}\cdot9$ and $10^{m}\cdot5$, 340° ± (26. 11. 1900).
3333	9·4	23 37 34·0	53·4	?	„ $9^{m}\cdot6$ (26. 11. 1900).
− 70 408	9·7	5 35 9·5	− 70 33·6	×	*h* calls both stars 10^{m}, his 569 and 570 in Cape Observations, p. 161. No mention of nebulosity.
409	9·6	5 35 12·0	30·9	×	

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Star.	Mag.	1875. R.A.	1875. Dec.	Mark.	Notes.
		h m s	° ′		
− 70 429	10·2	5 40 48·0	− 70 8·3	?	Seen, $10^{m}\cdot5$ (26. 3. 1901) } Many nebulæ are in the field.
456	10·1	5 51 3·0	3·1	?	„ $9^{m}\cdot9$ (26. 3. 1901) }
853	10·0	8 59 40·5	39·5	?	„ $9^{m}\cdot9$, the brightest of a group of three stars (17. 5. 1901).
1923	9·3	14 54 14·0	25·8	?	„ $9^{m}\cdot5$ (21. 4. 1901).
− 71 321	9·6	5 13 59·0	− 71 5·2	×	No nebulosity seen (25. 3. 1901).
335	8·4	5 24 16·0	37·2	×	Is *h* 418, 7^{m}, no mention of nebulosity. No nebulosity seen (25. 3. 1901).
344	8·9	5 29 15·0	18·8	×	Is *h* 486, $8^{m}\cdot5$, no mention of nebulosity.
348	9·6	5 32 29·0	9·2	×	No nebulosity exactly at star, several nebulæ very near, the star 27′ *f.* on parallel being in the midst of a nebula (30. 3. 1901). The latter would seem to be *h* 2904, but if so the position in Dreyer is somewhat out. There are some small nebulæ about which are not in Dreyer.
365	9·9	5 46 7·0	36·8	?	Seen, $10^{m}\cdot0$ (4. 4. 1901).
− 72 36	11·0	0 18 39·0	− 72 48·3	?	Is *h* 37, 11^{m} in his catalogue of the Nubecula Minor. Seen, $10^{m}\cdot7$, is somewhat fainter than C.P.D. −72° No. 38 which is 5′ S.*f.* (2. 11. 1900).
348	9·5	5 8 25·0	20·0	×	A small double here, 10^{m} and $10\frac{1}{2}^{m}$, 7″ ± 210° ±. Is near *h* 3746 (2. 11. 1900).
368	9·7	5 22 46·5	10·6	×	Seen, about $9^{m}\cdot7$, no nebulosity visible (2. 11. 1900).
876	9·5	9 50 40·5	28·0	?	„ $9^{m}\cdot4$ (21. 6. 1901).
883	9·9	9 55 53·5	27·1	?	„ $10^{m}\cdot0$ (21. 6. 1901).
963	9·9	10 24 41·5	35·9	?	„ $10^{m}\cdot5$ (25. 6. 1901).
1649	9·7	14 49 28·1	2·5	?	„ $9^{m}\cdot5$ (12. 6. 1901).
1893	9·5	15 46 10·0	31·3	?	Is G.P.Z. No. 11345 when the place in G.P.Z. is corrected. See Errata of G.P.Z.
2507	9·5	20 4 33·0	29·1	?	No star there (10. 7. 1901).
− 73 465	9·9	7 45 52·0	− 73 4·0	?	Seen, $9^{m}\cdot8$ (2. 1. 1901).
617	9·6	9 32 45·0	1·2	?	„ $9^{m}\cdot7$ (29. 12. 1900).
660	9·8	9 50 3·0	2·0	?	No star there (21. 6. 1901).
1501	10·0	15 3 53·0	38·9	?	Seen, $10^{m}\cdot5$ (12. 6. 1901).
− 74 326	9·5	5 25 54·0	− 74 38·5	?	Seen, $9^{m}\cdot9$ (21. 4. 1901).
334	9·9	5 32 0·0	30·7	?	There is an 11^{m} star very near the position, but there is a $9^{m}\cdot6$ about 2′ N. *pr.* (21. 4. 1901).
607	9·9	9 31 48·0	14·7	?	Seen, is double, 10^{m} and $10\frac{1}{4}^{m}$, 15″ apart (15. 6. 1901).
694	9·9	10 19 8·0	58·0	?	„ $10^{m}\cdot2$ (21. 6. 1901).
783	9·6	11 6 21·0	1·1	?	„ $9^{m}\cdot7$ (9. 7. 1901).
986	9·6	12 42 55·0	28·2	?	„ $10^{m}\cdot0$ (21. 4. 1901).
1006	9·6	12 50 16·0	11·1	?	„ $9^{m}\cdot9$ (21. 4. 1901).
− 75 380	9·6	6 29 18·0	− 75 39·7	?	Not seen, some faint stars near the position (22. 2. 1901).
599	9·4	9 37 9·0	11·2	?	Not seen (30. 3. 1901)
698	9·7	10 54 30·0	37·6	?	Seen, $9^{m}\cdot6$ [red] (12. 6. 1901).
844	9·6	12 54 31·0	52·8	?	„ $9^{m}\cdot7$ (12. 6. 1901).
1334	9·4	16 41 13·0	14·1	?	„ $9^{m}\cdot4$ (12. 6. 1901).
− 76 276	9·8	4 28 49·0	− 76 30·9	?	Not seen (23. 11. 1900).
590	9·9	9 31 22·0	14·5	?	Seen, $9^{m}\cdot8$ (12. 6. 1901).
− 77 170	9·7	4 28 3·0	− 77 0·0	?	Seen, $9^{m}\cdot8$ (23. 11. 1900).
171	9·7	4 28 17·0	0·0	?	„ $9^{m}\cdot9$ (23. 11. 1900).
− 78 563	9·9	10 33 17·0	− 78 47·6	?	Seen, $9^{m}\cdot8$ (12. 6. 1901).
906	9·7	14 36 37·0	21·1	?	„ $9^{m}\cdot6$ (12. 6. 1901).
1462	9·5	22 50 12·0	5·1	?	„ $9^{m}\cdot8$ (26. 11. 1900).
− 80 156	9·7	5 40 25	− 80 10·1	?	Seen, $10^{m}\cdot0$ (24. 4. 1901).
− 82 705	9·5	16 53 47	− 82 36·1	?	Seen, $10^{m}\cdot0$ (12. 6. 1901).
− 83 625	9·7	17 3 22	− 83 3·1	?	There are two stars about $9^{m}\cdot7$, 2′ apart—a blank region (12. 6. 1901).
− 85 52	9·5	5 0 45	− 85 16·0	?	Seen, $9^{m}\cdot4$ (1899).
112	10·3	7 38 55	34·0	?	„ $10^{m}\cdot5$ (8. 2. 1900).

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COLOURED STARS

OBSERVED DURING THE REVISION OF THE CAPE PHOTOGRAPHIC DURCHMUSTERUNG. By R. T. A. INNES.

With the greater part of the C.P.D. Revision special maps were made for each star looked up as previously mentioned.

If any of the stars on these maps were noticed to be coloured the fact was duly recorded on what is intended to be the scale recommended by Dr. Chandler, see page 8 *ante*.

These stars will be found on the list which follows—the column headed *P* gives the photographic magnitude taken from the C.P.D., *V* is the magnitude from the C.Z. when found in that work, otherwise from the B.D., C.G.A., Cor. DM. or from Cape estimates.

The missing stars of the C.P.D. which were found to be coloured and known or suspected variable stars are not given in the list.

Very few stars of a deeper red than 7·5 have been found because they are actually few in number. Very few stars of a lighter shade than deep yellow have been recorded because of their frequency.

Name.	1875.		Magnitude.		Colour.	*P*—*V*.	
	R.A.	Dec.	*P*.	*V*.			
	h m s	° ′					
Lal. 3086	1 34 0	−23 32·8	7·6	7·5	5	0·1	
Lac. 616	1 56 24	−66 40·4	7·4	6·5	4	0·9	
C.Z. 1h 1550	1 58 1	−66 57·1	8·5	7·8	6	0·7	
Lac. 652	2 0 37	−75 2·8	8·4	7·0	4	1·4	
C.Z. 2h 878	2 32 22	−79 2·4	8·7	8·5	6	0·2	
Cor. DM. −50°, 914	3 1 46	−50 51·6	...	9·9	8·5	...	Est. mag. 9·3.
Anon	3 11 0	−81 43	...	9·0	6	...	
δ Reticuli	3 56 46	−61 45·2	6·6	5·0	6	1·6	
C.Z. 4h 419	4 13 7	−55 57·4	8·9	8·5	7	0·4	
Lac. 1502	4 18 7	−76 6·8	8·3	8·0	6	0·3	
G.P.Z. 2472	4 19 12	−76 17·5	9·4	8·9	5	0·5	
„ 2851	4 52 23	−85 2·5	9·1	8·6	4	0·5	
Lac. 1710	4 53 19	−66 52·5	8·0	7·0	5	1·0	Two obs. 5 and 5 est. mag. 7·5 and 7·5.
C.Z. 5h 118	5 3 42	−79 18·9	9·3	9·0	5	0·3	Est. mag. 8·4.
Lac. 1950	5 27 54	−74 44·1	8·4	7·5	4	0·9	
C.P.D. −47° 612	5 30 39	−47 38·0	9·6	9·0	6	0·6	Is double.
G.P.Z. 3415	5 42 45	−70 5·3	9·8	9·0	6	0·8	
C.G.A. 7302	6 1 40	−21 47·9	7·8	6·1	6	1·7	
G.P.Z. 3803	6 9 7	−65 39·1	9·6	9·0	6	0·6	
η_2 Doradus	6 10 58	−65 33·6	6·7	5·5	7	1·2	Two obs. 7 and 7.
C.Z. 6h 830	6 18 9	−73 24·2	9·4	9·0	6	0·4	
B.D. −19° 1555	6 41 23	−19 14·2	9·3	8·9	6	0·4	
o_1 Canis Maj	6 48 56	−24 1·8	7·2	4·0	6·5	3·2	"Orange" in C.G.A.
P. 6h 291	6 50 30	−42 12·5	8·2	6·5	7·5	1·7	"Red" in C.G.A.
C.P.D. −19° 1672	6 57 47	−19 36·9	10·3	9·2	7	1·1	

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Name.	1875. R.A.	1875. Dec.	Magnitude. P.	Magnitude. V.	Colour.	P—V.	
	h m s	° ′					
Lac. 2732	7 12 39	−46 33·2	7·6	6·0	4	1·6	"Red" in C.G.A.
Lac. 2728	7 13 10	−38 41·3	7·9	7·0	7·5	0·9	
Bris. 1757	7 41 45	−66 36·1	8·5	7·5	5	1·0	
C.Z. 7h 3055	7 41 49	−66 34·9	9·1	8·5	7	0·6	
„ 3567	7 48 8	−60 54·2	8·4	8·0	4	0·4	
Lal. 15593	7 52 23	−20 5·6	8·8	7·7	6·5	1·1	
C.Z. 7h 3927	7 52 38	−61 32·2	8·5	7·5	5	1·0	
„ 4097	7 54 29	−58 47·4	7·7	7·0	6	0·7	
C.P.D. −48° 1395	7 56 35	−48 44·0	9·3	8·6	7	0·7	
Bris. 1976	8 15 8	−45 48·8	8·4	7·5	4	0·9	
C.Z. 8h 1684	8 20 17	−75 57·4	9·9	9·5	5	0·4	
B.D. −19° 2487	8 32 42	−19 9·7	9·2	9·0	4	0·2	
Lal. 17091	8 33 3	−19 17·9	7·7	6·7	6	1·0	β 207.
Lac. 3475	8 35 5	−62 24·8	7·2	6·0	5	1·2	
C.Z. 8h 2989	8 36 14	−62 24·0	8·8	6·8	6·5	2·0	
G.P.Z. 5727	8 36 58	−84 39·7	9·1	8·6	4	0·5	
C.Z. 8h 3175	8 38 39	−38 26·6	7·6	7·0	5·5	0·6	
„ 3421	8 41 40	−50 17·8	8·9	9·0	6	−0·1	Est. mag. 8·4. Th. gives 8·7. Taken as P.—V. = 0·3.
C.Z. 9h 115	9 1 20	−60 4·2	8·6	8·0	4	0·6	
θ Pxydis	9 15 58	−25 26·0	7·0	5·2	8	1·8	
C.P.D. −27° 3750	9 18 0	−27 5·3	9·8	8·6	7	1·2	Th. = 8m·4.
Lal. 18688	9 23 27	−20 12·2	7·3	5·7	7·5	1·6	Est., mag. 6·3 not brighter.
C.Z. 9h 2045	9 25 20	−39 47·8	9·0	8·2	7	0·8	
C.P.D. −51° 2288	9 26 0	−51 29·0	9·4	9·2	5	0·2	
C.Z. 9h 2466	9 30 37	−62 40·4	8·9	8·5	6	0·4	
Lac. 4019	9 32 43	−81 17·3	9·1	8·0	6	1·1	
C.P.D. −66° 1039	9 39 25	−66 20·3	9·4	9·0	Blue.	...	
Lal. 19338	9 45 18	−22 26·0	9·4	6·6	8	2·8	"Crimson" in C.G.A.
ν Chameleontis	9 46 16	−76 11·6	7·4	6·0	4	1·4	
G.P.Z. 6588	9 50 52	−72 53·0	9·4	9·0	6	0·4	
C.Z. 10h 206	10 2 55	−52 38·9	8·8	8·0	8·5	0·8	Fine.
Lac. 4178	10 5 22	−41 5·8	7·6	7·0	5	0·6	"Orange" in C.G.A.
Bris. 2886	10 7 13	−61 9·1	8·5	8·0	5	0·6	
G.P.Z. 6790	10 7 31	−70 27·2	9·4	8·7	7	0·7	
Lac. 4219	10 7 57	−67 16·5	8·2	7·0	3·5	1·2	Two obs. 3·5 and 3·5.
C.P.D. −58° 2148	10 18 33	−58 7·9	9·2	8·3	7	0·9	"Orange" in C.G.A.
Lac. 4335	10 24 3	−72 31·8	8·1	7·0	5	1·1	
„ 4367	10 28 6	−72 34·7	7·7	5·5	6	2·2	
C.Z. 10h 2059	10 28 17	−59 8·9	10·0	9·0	7	1·0	
Lac. 4361	10 29 45	−43 1·3	7·4	6·5	4	0·9	
C.Z. 10h 2266	10 31 14	−59 23·6	9·3	8·5	7	0·8	
Lac. 4377	10 31 57	−42 52·5	7·7	7·5	2	0·2	
C.P.D. −41° 4776	10 35 45	−41 37·2	9·4	8·8	6	0·6	Th. = 8m·9.
Lac. 4486	10 42 44	−68 33·0	7·4	6·8	2	0·6	
„ 4521	10 48 25	−67 32·8	8·8	7·0	6	1·8	
Anon	10 55 36	−68 3	...	9·0	8	...	In no catalogue.
„	10 55 36	−68 53·0	...	9·0	7·5	...	3 obs.
C.Z. 11h 582	11 8 7	−59 24·6	9·4	8·5	8·5	0·9	
o_1 Centauri	11 26 0	−58 45·1	7·2	5·0	6	2·2	
o_2 „	11 26 2	−58 49·5	6·4	5·5	1	0·9	
	11 32 52	−63 49·7	9·4	9·0	4	0·4	
C.Z. 11h 2455	11 35 2	−43 43·1	8·3	8·0	3	0·3	
Lac. 4892	11 41 13	−57 0·3	7·8	6·0	6	1·8	
Y_3 5040	11 42 23	−35 17·5	7·8	7·0	8	0·8	Two obs. 8·0 and 8·0 colour.
Lac. 4907	11 43 59	−69 31·8	7·1	5·5	5	1·6	
C Z. 11h 3132	11 45 30	−67 52·3	9·6	9·0	7	0·6	
„ „ 3176	11 46 12	−68 13·2	9·2	8·8	7	0·4	

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Name.	1875. R.A.	1875. Dec.	Magnitude. P.	Magnitude. V.	Colour.	P—V.	
	h m s	° ′					
C.Z. 11h 3205	11 46 38	−69 16·9	9·4	9·0	8	0·4	
„ „ 3795	11 55 32	−60 4·5	9·4	8·7	6	0·7	
Anon	12 1 10	−66 22	...	9·7	9	...	
Lac. 5091	12 11 43	−50 33·0	8·3	8·5	6	−0·2	8m·0 in C.G.A.
„ 5163	12 21 29	−61 6·2	8·3	6·5	6	1·8	
C.Z. 12h 2667	12 44 34	−62 45·5	9·2	8·5	5	0·7	
„ „ 3127	12 52 50	−63 37·0	10·0	9·0	9·2	1·0	Two obs. 9 and 9·5.
„ „ 3364	12 56 56	−71 57·7	9·5	8·5	5	1·0	
Anon	12 58 45	−76 37·5	...	9·5	8	...	
C.Z. 12h 3526	12 59 48	−72 9·1	8·9	7·5	6	1·4	
C.G.A. 17961	13 5 45	−62 9·1	8·8	8·0	6	0·8	
C.Z. 13h 496	13 8 18	−55 41·6	8·9	8·5	6	0·4	
„ „ 550	13 8 57	−55 33·2	9·2	8·5	6	0·7	
Lac. 5469	13 10 21	−42 38·3	8·0	7·1	2	0·9	
C.P.D. −42° 6276	13 21 9	−42 8·9	8·8	8·3	6	0·5	
„ −47° 6076	13 25 45	−47 38·9	8·7	8·1	6	0·6	
C.Z. 13h 2201	13 36 28	−51 37·1	8·5	8·0	3	0·5	
„ „ 2355	13 38 48	−67 31·1	8·9	8·0	4	0·9	Est. Mag. = 8·5.
Lac. 5717	13 46 22	−54 27·2	8·2	7·2	4	1·0	
G.P.Z. 9657	13 46 28	−81 19·4	9·3	8·8	5	0·5	
Lac. 5722	13 46 46	−54 24·2	8·4	7·2	6	1·2	
C.G.A. 18877	13 46 48	−36 14·8	8·4	7·5	5	0·9	
C.Z. 13h 3015	13 49 0	−57 5·8	8·6	7·5	9	1·1	Is *pr.* by C.Z. 3005, Mag. 8·5, blue and double.
Lac. 5740	13 49 13	−65 11·3	8·0	7·0	5	1·0	
Taylor 6570	14 0 58	−60 6·7	9·6	9·0	7	0·6	
C.Z. 14h 295	14 4 34	−53 16·1	9·1	8·2	5	0·9	
„ „ 369	14 5 42	−53 20·7	9·2	7·5	8	1·7	"Red" in C.Z.
„ „ 660	14 10 14	−71 44·2	8·6	7·5	3	1·1	
„ „ 851	14 13 20	−70 26·5	9·3	9·5	5	−0·2	
„ „ 910	14 14 22	−71 58·8	9·4	8·0	4	1·4	
C.P.D. −54° 6050	14 24 38	−54 40·4	9·8	8·9	7	0·9	
Anon	14 28 15	−59 23	...	9·3	7	...	
C.Z. 14h 3020	14 47 32	−44 11·2	8·7	7·5	5	1·2	
C.P.D. −44° 7058	14 48 3	−44 40·5	9·8	9·3	5	0·5	
C.Z. 15h 43	15 0 41	−72 23·7	8·6	8·5	5	0·1	
Lac. 6222	15 2 21	−69 36·3	9·0	6·0	8·5	3·0	Three obs. 8·0, 8·5 and 9·0 colour.
G.P.Z. 10782	15 5 24	−67 31·9	9·7	8·3	6	1·6	
C.Z. 15h 598	15 8 31	−53 44·9	9·2	9·0	6	0·2	
Lac. 6345	15 18 5	−65 27·0	8·8	7·5	8·5	1·3	
Cor. D.M. −48° 10151	15 29 43	−48 45·4	...	9·4	5	...	Has a faint *comes* S.
C.Z. 15h 2131	15 31 0	−63 46·3	8·1	7·0	6	1·1	
Lal 28446	15 31 24	−22 38·2	8·0	7·7	7	0·3	
C.Z. 15h 2382	15 34 18	−63 13·5	9·2	8·8	6	0·4	
G.P.Z. 11464	15 54 42	−73 37·9	9·0	8·0	4	1·0	
C.P.D. −54° 7007	15 55 42	−54 35·8	9·8	8·9	6	0·9	
C.Z. 15h 4147	15 59 29	−54 50·6	8·3	7·0	6·5	1·3	Est. mag. = 7·5.
δ_1 Apodis	16 1 44	−78 22·5	7·0	5·0	5	2·0	
δ_2 „	16 1 53	−78 20·9	7·3	5·5	4	1·8	
G.P.Z. 11593	16 3 43	−68 25·6	9·0	8·2	4	0·8	
C.P.D. −55° 7420	16 10 23	−55 40·5	9·6	8·9	7	0·7	
C.Z. 16h 1260	16 17 53	−52 28·7	8·3	8·0	5	0·3	
Bris. 5730	16 18 58	−45 58·0	8·1	7·5	6	0·6	
Anon	16 21 7	−53 22·5	...	9·4	7·5	...	
C.Z. 16h 1586	16 23 10	−53 29·0	9·8	9·2	4	0·6	

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Name.	1875. R.A.	1875. Dec.	Magnitude. P.	Magnitude. V.	Colour.	P—V.	
	h m s	° ′					
C.Z. 16h 1684	16 24 34	−53 24·8	9·4	9·0	4	0·4	
„ „ 1694	16 24 45	−46 17·4	8·6	7·5	7	1·1	
„ „ 1752	16 25 32	−46 15·5	9·0	8·5	6	0·5	
Lac. 7103	16 59 47	−66 26·8	8·8	8·0	5	0·8	
C.Z. 17h 382	17 5 46	−69 16·8	9·8	9·0	3	0·8	
G.P.Z. 12531	17 15 33	−70 59·5	9·8	8·9	5	0·9	
C.Z. 17h 1422	17 20 56	−53 26·9	9·6	9·2	3	0·4	
G.P.Z. 12725	17 30 47	−67 19·9	8·8	8·0	4	0·8	
C.Z. 17h 2260	17 33 8	−76 38·1	9·4	8·0	6	1·4	
Lac. 7561	18 2 15	−63 42·8	8·0	7·0	5	1·0	"Orange red" in C.G.A.
O.A. 18161	18 16 53	−19 52·2	9·5	8·6	6·5	0·9	
Bonn 18h 55.	18 17 14	−19 47·8	9·0	8·0	8·0	1·0	
Lal. 35763	19 1 25	−19 8·9	7·9	7·4	6	0·5	
χ_3 Sagittarii	19 17 56	−24 12·3	7·0	6·0	7·5	1·5	
G.P.Z. 14127	19 43 3	−86 28·0	8·3	7·9	6	0·4	
G.P.Z. 14208	19 44 33	−76 33·7	8·2	7·5	7	0·7	
	20 1 17	−67 37·1	9·2	9·0	3	0·2	
Lac. 8360	20 17 1	−81 42·4	7·2	6·5	6	0·7	
σ Pavonis	20 37 26	−69 13·9	7·0	6·0	6	1·0	
Cape 1880 No. 11124	20 47 0	−85 42·0	8·1	7·5	5	0·6	
3 Piscis Austr.	21 5 52	−28 7·7	6·8	5·8	4	1·0	
ε Octantis	22 5 52	−81 3·6	6·6	5·6	4	1·0	
Lac. 9055	22 10 7	−75 35·6	8·5	8·0	7	0·5	
Lac. 9355	23 1 37	−81 35·4	7·7	6·5	7	1·2	
„ 9636	23 47 15	−30 5·6	8·2	8·0	6	0·2	

The number of stars in the above list is too small to sustain any strong general conclusions.

Generally, as already known, the redder a star is the greater is the positive difference $P—V$, and this difference also appears to be greater, the brighter the star is visually.

This is shewn in the following table.

Table of $P—V$ or Photo. magnitude correction depending on magnitude and colour.

Visual Magnitude.	Colour of the Star. 3–4	4–6	6–8	8–10
	m.	m.	m.	m.
4 to 6	$+1·4_5$	$+1·7_8$	$+1·9_5$	$+3·0_1$
6 „ 7	$+1·1_4$	$+1·1_{12}$	$+1·5_7$	—$_0$
7 „ 8	$+0·8_{12}$	$+0·8_{22}$	$+1·0_5$	$+1·1_8$
8 „ 9½	$+0·5_{10}$	$+0·6_{20}$	$+0·8_{18}$	$+1·0_2$

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For example :—From the mean of 12 observations it is found that a star of the 6–7 mag. of colour 4-6 will be 1·1 mags. fainter photographically than visually.

An approximate formula for this difference is

$$P - V = \frac{C}{V}$$

In connection with this table, reference should be made to Professor Kapteyn's remarks on pp. 84–86 of the C.P.D. vol. I.

Note :—As there are very few stars of estimated colour $4\frac{1}{2}$, $5\frac{1}{2}$, and $6\frac{1}{2}$, or more than $8\frac{1}{2}$, the average values of the colour will roughly be about as follows :—

Colour,	3–4	4–6	6–8	8–10
Average Value,	3·6	5·6	7·6	8·6

STATISTICAL COUNTS OF STARS TO NINTH MAGNITUDE

IN THE CAPE PHOTOGRAPHIC DURCHMUSTERUNG. By R. T. A. INNES.

The revision of stars missing in the C.P.D., which has been summarized by Sir David Gill in his introduction to the 3rd volume of that work, and which is now published *in extenso* in this volume of the Annals of the Cape Observatory, has convinced me that (with a few negligible exceptions perhaps), no uncoloured star of Argelander's 9·0 mag. (as gathered from the B.D.) has escaped inclusion if it occurred within the limits of the C.P.D.

As it was desirable to know the number of stars to the 9·0 mag. inclusive in the Southern Hemisphere, Miss Carney made counts of the stars in the C.P.D. to that limit which follow in Table I. The column headed C.P.D. gives the number of stars to the 9·0 mag. as given by the plates of the C.P.D., the column headed C.Z. gives the number of stars estimated as 9·0 mag. or brighter in the *Cordoba Zone Catalogue*, but which in the C.P.D. are under 9·0 mag., but yet appear there. Thus "Missing stars, &c.," are not included. Several reasons could be advanced for certain C.Z. 9·0 mag. stars being fainter than 9·0 in the C.P.D., viz. :—

a. The star is coloured.
b. The C.Z. mag. is too bright.
c. The C.P.D. scale is too bright.

Other less plausible reasons could also be found if necessary.

The average 9·0 mag. star of Gould's C.Z. is about $9\frac{1}{3}^m$ in the Harvard Southern Meridian Photometry, practically the same as found at Harvard for Argelander's 9·0 mag.

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TABLE I.

COUNTS OF STARS TO THE 9·0 MAGNITUDE INCLUSIVE IN THE C.P.D.

(The column headed C.Z. enumerates those stars of the C.Z., 9·0 mag. or brighter, which are under 9·0 mag. in the C.P.D.).

R.A.	18°	19°	20°	21°	22°		23°		24°		25°		26°		27°	
	C.P.D.	C.P.D.	C.P.D.	C.P.D.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.
0h— 1h	5	54	47	45	50	0	46	0	40	4	42	7	40	4	29	4
1 — 2	3	46	48	39	50	0	50	3	44	7	30	5	33	5	38	3
2 — 3	5	36	55	58	42	1	41	0	55	6	64	4	46	7	36	0
3 — 4	2	52	57	62	64	1	41	6	67	1	65	3	84	4	46	5
4 — 5	5	79	78	91	78	0	81	1	61	5	55	9	62	3	63	10
5 — 6	2	83	74	87	89	0	80	9	75	5	86	12	80	9	93	7
6 — 7	9	108	158	116	143	1	125	9	149	12	135	12	139	17	137	9
7 — 8	9	140	145	134	158	1	192	7	176	13	196	20	211	31	179	15
8 — 9	6	122	120	135	122	0	155	15	84	15	95	7	90	38	134	24
9 —10	7	94	112	106	112	0	115	3	64	5	74	6	75	18	80	18
10 —11	9	91	82	88	92	0	77	2	63	17	59	8	71	11	37	11
11 —12	4	52	57	59	65	0	57	6	30	13	66	7	56	4	57	14
12 —13	3	71	56	47	52	3	49	7	56	12	60	8	78	4	56	2
13 —14	1	49	54	55	67	1	46	5	69	6	53	6	61	5	69	10
14 —15	6	62	45	55	54	1	72	7	68	6	53	8	85	7	81	7
15 —16	5	74	63	65	49	0	76	12	82	7	83	5	93	4	101	8
16 —17	3	61	45	66	55	1	52	3	70	5	59	5	90	7	72	15
17 —18	9	88	88	74	103	5	81	10	95	11	61	6	65	9	101	17
18 —19	14	179	111	106	127	2	109	23	90	12	92	7	85	7	95	16
19 —20	4	112	95	108	93	0	89	5	61	12	70	12	64	7	75	10
20 —21	7	89	90	96	71	1	72	1	75	5	59	2	57	6	79	5
21 —22	10	59	68	57	58	1	58	3	45	5	55	7	39	4	62	4
22 —23	3	57	62	48	48	2	56	5	47	6	42	2	47	6	44	3
23 —24	4	51	44	46	50	4	50	3	33	3	31	5	34	2	48	8
	135	1909	1844	1843	1892	25	1870	145	1699	193	1685	153	1785	219	1812	225

R.A.	28°		29°		30°		31°		32°		33°		34°	
	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.
0h— 1h	25	13	36	3	36	5	39	2	43	4	37	5	32	4
1 — 2	30	7	37	4	43	4	25	6	45	4	31	10	42	3
2 — 3	63	8	43	10	37	9	36	4	29	4	36	4	38	0
3 — 4	58	5	37	12	41	3	35	6	45	5	38	5	28	7
4 — 5	62	7	65	2	60	1	51	6	44	8	65	6	26	2
5 — 6	70	8	83	6	74	7	74	10	79	3	78	10	53	9
6 — 7	110	10	109	15	91	23	105	11	99	14	104	8	91	10
7 — 8	204	15	187	17	168	22	188	25	152	29	152	20	113	36
8 — 9	134	19	134	33	105	17	74	7	124	13	147	10	93	31
9 —10	90	8	75	9	56	8	75	15	86	17	66	21	67	15
10 —11	43	11	57	9	54	8	62	5	63	7	49	19	69	6
11 —12	38	13	57	17	48	17	49	13	44	10	44	16	78	5
12 —13	67	17	53	19	78	9	61	6	72	4	59	13	53	5
13 —14	59	15	68	17	67	18	62	18	73	9	79	10	72	13
14 —15	68	15	69	12	64	11	63	11	91	11	62	11	55	14
15 —16	77	17	57	19	74	11	80	4	78	8	52	16	46	16
16 —17	76	11	71	8	83	21	100	14	76	11	67	14	46	23
17 —18	111	6	106	10	92	21	95	19	149	20	110	20	213	29
18 —19	93	17	77	10	70	10	74	10	97	16	89	19	123	15
19 —20	71	12	61	7	51	4	69	10	63	12	60	9	64	8
20 —21	66	3	53	9	43	8	47	3	44	4	57	5	89	1
21 —22	46	2	41	10	46	5	46	3	46	5	46	8	40	4
22 —23	51	11	30	4	40	4	36	2	43	1	41	4	34	5
23 —24	25	4	46	4	43	2	34	1	39	4	28	4	22	5
	1737	244	1652	266	1564	248	1580	211	1724	223	1597	267	1587	266

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R.A.	35°		36°		37°		38°		39°		40°		41°	
	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.
0h— 1h	28	2	35	2	23	5	28	5	33	1	30	1	31	5
1 — 2	29	6	33	4	36	5	25	3	32	3	32	6	35	3
2 — 3	30	2	44	2	45	6	42	7	31	2	29	0	33	2
3 — 4	27	6	42	5	31	5	46	8	38	1	44	3	53	4
4 — 5	50	4	32	4	31	6	50	8	45	5	47	6	56	7
5 — 6	63	8	50	5	53	17	61	11	62	2	64	1	62	5
6 — 7	82	15	86	8	77	17	72	12	69	4	82	7	72	3
7 — 8	117	11	111	15	118	14	115	23	99	15	97	12	92	10
8 — 9	99	14	133	15	113	10	112	10	127	30	117	20	141	21
9 —10	83	10	67	19	74	5	67	19	69	24	84	18	80	20
10 —11	64	8	87	4	63	5	51	9	61	6	57	9	86	6
11 —12	82	6	83	14	71	6	66	6	41	9	60	5	57	6
12 —13	56	5	43	3	58	2	59	12	45	10	62	7	45	6
13 —14	73	9	60	4	64	1	50	9	53	7	63	11	66	12
14 —15	59	11	74	16	58	10	42	15	49	12	60	6	77	14
15 —16	57	17	75	17	84	14	88	19	66	11	107	13	80	15
16 —17	61	11	46	19	86	13	63	7	62	16	113	15	106	13
17 —18	151	40	127	11	167	8	136	26	79	32	129	32	115	10
18 —19	122	9	129	10	106	5	65	19	78	17	63	19	72	9
19 —20	51	4	60	4	62	1	27	19	43	8	46	4	52	3
20 —21	69	2	98	1	77	2	37	16	48	6	36	5	48	2
21 —22	47	6	58	5	56	3	35	12	48	2	36	3	36	9
22 —23	36	7	35	3	21	9	31	16	34	6	36	4	22	1
23 —24	20	5	37	4	28	6	29	15	32	4	40	1	47	2
	1556	218	1645	194	1602	175	1397	306	1344	233	1533	208	1563	148

R.A.	42°		43°		44°		45°		46°		47°		48°	
	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.
0h— 1h	30	7	39	0	41	2	33	2	31	2	41	0	27	5
1 — 2	30	2	37	3	29	6	30	2	41	3	25	1	25	3
2 — 3	31	0	28	2	27	3	33	8	26	9	33	3	24	0
3 — 4	34	3	37	4	42	4	33	4	38	7	31	1	41	1
4 — 5	67	5	43	6	44	4	55	6	39	3	34	6	42	4
5 — 6	56	12	39	6	42	9	35	4	32	2	45	5	37	5
6 — 7	80	6	58	9	67	8	51	9	78	13	63	7	61	11
7 — 8	87	14	93	20	80	31	71	27	105	24	61	12	95	16
8 — 9	127	25	142	29	110	23	156	19	133	21	157	15	147	11
9 —10	90	16	72	19	86	33	89	20	78	21	98	20	107	14
10 —11	66	14	69	13	68	18	67	6	69	8	63	29	90	24
11 —12	40	14	49	15	38	6	57	8	48	5	53	13	89	6
12 —13	42	12	49	6	79	9	64	6	60	3	66	11	67	9
13 —14	77	14	59	5	62	3	67	8	84	14	88	14	96	6
14 —15	58	13	52	12	64	18	83	27	81	26	52	28	79	21
15 —16	85	10	99	11	104	16	91	12	89	13	96	20	127	18
16 —17	73	23	74	11	80	31	120	28	140	14	113	16	142	6
17 — 18	109	20	70	14	99	5	116	20	114	21	102	7	79	20
18 —19	72	10	60	12	64	17	68	9	76	4	64	9	82	3
19 —20	53	5	44	12	39	10	44	7	50	10	48	1	52	3
20 —21	28	4	39	9	36	8	39	3	52	4	33	3	41	2
21 —22	29	3	40	5	39	7	37	2	45	1	38	3	42	3
22 —23	31	4	31	7	48	5	55	2	45	4	46	4	41	3
23 —24	50	5	42	5	42	5	35	4	45	4	38	9	39	13
	1445	241	1365	235	1430	281	1529	243	1599	236	1488	237	1672	207

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R.A.	49°		50°		51°		52°		53°		54°		55°	
	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.
0h— 1h	27	0	31	3	31	1	25	3	36	1	42	1	44	0
1 — 2	25	6	41	0	24	1	24	3	30	0	37	3	31	1
2 — 3	37	3	29	6	30	4	28	3	37	0	23	3	30	1
3 — 4	43	6	41	3	50	1	44	0	28	4	27	1	34	2
4 — 5	40	2	48	3	36	3	45	2	35	5	37	1	35	2
5 — 6	45	3	46	2	45	4	50	4	46	7	37	6	49	0
6 — 7	54	11	51	7	56	4	69	8	54	4	56	11	51	8
7 — 8	86	14	92	8	83	0	79	4	67	4	87	7	86	7
8 — 9	129	11	92	12	82	11	90	17	86	8	74	7	86	10
9 —10	107	10	105	10	122	19	124	24	128	17	118	24	132	21
10 —11	116	21	96	17	139	8	89	13	84	21	109	23	95	17
11 —12	84	9	99	19	90	10	88	6	62	11	76	24	66	16
12 —13	99	7	92	8	92	6	97	7	81	6	71	16	92	15
13 —14	105	3	110	7	93	8	97	9	69	10	65	16	62	21
14 —15	78	16	79	4	75	17	74	8	51	24	59	16	65	17
15 —16	155	18	168	11	169	13	168	23	86	30	67	17	85	2
16 —17	97	11	134	16	147	14	147	14	96	34	110	17	79	20
17 —18	96	13	92	15	79	3	80	11	61	4	64	16	67	13
18 —19	70	5	63	6	74	8	64	9	56	5	72	2	56	7
19 —20	49	2	59	8	51	4	48	4	52	4	46	3	46	8
20 —21	37	5	43	9	32	4	42	5	27	5	37	5	40	2
21 —22	35	3	36	6	38	6	43	6	41	4	35	1	36	2
22 —23	36	1	32	2	25	1	39	2	22	2	35	2	33	3
23 —24	31	3	23	2	31	0	42	1	28	2	34	3	24	2
	1681	183	1702	184	1694	150	1696	166	1363	212	1418	225	1428	197

R.A.	56°		57°		58°		59°		60°		61°		62°	
	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.
0h— 1h	33	1	34	1	21	4	24	4	21	2	25	2	19	2
1 — 2	28	2	29	2	20	1	29	2	28	1	29	1	17	0
2 — 3	31	1	28	2	32	3	28	2	26	2	23	1	31	3
3 — 4	32	1	27	3	35	1	24	2	28	3	28	2	23	1
4 — 5	47	0	42	1	36	2	24	6	25	3	33	4	28	1
5 — 6	47	3	39	3	28	1	28	3	36	6	32	1	40	0
6 — 7	58	5	37	6	56	5	48	5	54	10	45	6	33	6
7 — 8	68	12	84	5	73	5	84	4	121	5	56	3	46	2
8 — 9	65	8	67	11	51	12	68	15	46	8	37	9	44	3
9 —10	105	32	107	10	112	30	97	26	63	16	58	15	54	4
10 —11	113	44	167	22	234	22	216	29	133	27	98	24	56	9
11 —12	85	23	118	35	185	27	158	23	191	39	111	23	112	11
12 —13	94	15	101	24	97	19	100	18	107	13	86	22	69	7
13 —14	84	17	90	21	121	8	102	19	125	21	132	16	112	17
14 —15	64	11	51	11	91	11	88	7	100	11	101	10	85	7
15 —16	78	10	65	16	98	26	99	7	93	8	83	14	111	10
16 —17	89	17	86	14	93	8	86	7	83	15	72	12	79	18
17 —18	76	14	51	3	70	3	65	4	60	14	45	11	58	7
18 —19	62	3	50	3	57	14	47	13	55	10	53	3	52	1
19 —20	48	7	30	7	29	4	30	3	26	3	31	6	32	4
20 —21	34	2	24	1	35	2	30	3	19	5	22	4	20	5
21 —22	37	2	39	1	28	6	33	2	32	2	23	2	22	2
22 —23	33	1	34	4	57	2	40	3	43	1	50	3	26	2
23 —24	31	0	56	1	35	1	39	2	40	4	33	8	28	5
	1442	231	1456	207	1694	197	1589	209	1555	229	1306	202	1197	117

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R.A.	63°		64°		65°		66°		67°		68°		69°	
	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.
0h— 1h	16	4	18	3	16	2	19	1	10	1	10	5	17	2
1 — 2	11	3	10	2	21	2	19	3	20	5	22	3	9	4
2 — 3	30	2	34	4	16	0	23	3	23	1	18	1	20	4
3 — 4	29	4	29	1	27	0	28	1	16	4	17	2	14	3
4 — 5	30	3	29	2	32	4	32	1	19	3	14	2	22	1
5 — 6	27	0	19	3	33	2	25	1	22	4	29	2	18	1
6 — 7	29	2	24	1	38	3	15	6	18	3	17	3	23	6
7 — 8	50	3	37	3	31	5	31	2	40	1	16	4	24	2
8 — 9	43	10	48	8	37	7	36	5	22	5	29	3	29	3
9 —10	39	7	34	0	28	5	47	1	43	12	32	6	41	2
10 —11	84	13	57	5	40	6	44	14	50	13	56	10	37	6
11 —12	61	4	40	15	33	7	39	10	77	16	57	8	46	10
12 —13	56	18	64	6	55	13	53	17	43	18	62	15	41	7
13 —14	71	13	62	6	58	12	38	10	46	6	59	7	48	3
14 —15	106	11	73	6	82	3	56	4	53	8	46	4	40	7
15 —16	54	16	57	6	57	11	40	6	47	7	71	1	43	7
16 —17	65	10	61	5	53	2	61	4	55	2	41	4	35	2
17 —18	51	2	36	7	45	3	39	2	38	3	41	3	35	8
18 —19	46	4	44	2	30	4	31	2	30	4	37	4	39	3
19 —20	43	3	23	1	37	1	30	3	29	4	27	6	26	6
20 —21	35	4	36	4	18	3	13	2	27	2	23	0	21	1
21 —22	22	6	22	2	19	3	14	2	10	9	16	4	17	6
22 —23	27	3	31	1	24	2	35	0	28	1	21	0	26	1
23 —24	28	0	20	2	25	3	22	3	19	0	19	3	18	2
	1053	145	908	95	855	73	790	103	785	122	780	100	689	97

R.A.	70°		71°		72°		73°		74°		75°		76°	
	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.
0h— 1h	11	5	10	5	12	4	8	2	14	7	12	0	18	1
1 — 2	14	3	14	4	16	0	15	3	12	0	10	2	10	0
2 — 3	20	4	17	1	14	0	15	1	15	3	11	1	16	1
3 — 4	19	5	9	1	19	3	16	3	17	0	15	1	9	3
4 — 5	14	3	15	2	15	3	10	1	3	3	10	1	11	1
5 — 6	18	3	18	2	17	8	16	2	14	0	12	1	9	4
6 — 7	25	6	20	1	14	0	7	2	7	1	11	2	9	5
7 — 8	20	3	25	2	19	5	15	2	8	4	14	4	8	2
8 — 9	23	2	30	9	21	8	16	3	19	5	7	5	15	3
9 —10	26	2	41	6	26	2	30	3	22	2	21	0	13	4
10 —11	48	9	39	2	21	1	16	2	24	1	20	1	2	2
11 —12	42	6	31	5	22	3	26	6	18	3	17	2	8	3
12 —13	26	8	34	6	35	4	23	4	30	3	11	1	9	1
13 —14	16	7	13	10	19	5	28	3	26	4	13	2	14	2
14 —15	46	11	28	10	46	5	49	6	28	4	37	1	37	4
15 —16	48	5	36	2	52	1	45	1	35	3	40	1	30	0
16 —17	34	0	28	2	33	0	28	2	24	1	23	4	13	1
17 —18	42	1	40	0	44	1	26	2	21	2	17	1	11	2
18 —19	35	1	29	4	32	5	22	2	12	1	9	2	12	2
19 —20	36	6	25	5	35	3	21	1	28	1	17	3	15	0
20 —21	19	3	19	2	24	0	22	2	14	3	20	2	12	3
21 —22	18	3	20	8	14	2	11	3	9	7	14	0	12	2
22 —23	19	1	16	3	19	2	12	1	9	2	11	2	7	1
23 —24	16	2	21	3	10	1	17	5	13	2	4	3	8	2
	635	99	578	95	579	66	494	62	422	62	376	42	308	49

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R.A.	77°		78°		79°		80°		81°	82°	83°	84°	85°	86°	87°	88°	89°
	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.Z.	C.P.D.	C.P.D.	C.P.D.	C.P.D.	C.P.D.	C.P.D.	C.P.D.	C.P.D.	C.P.D.
0^h— 1^h	9	0	14	0	8	1	5	0	5	5	7	8	4	6	2	2	2
1 — 2	9	2	7	0	13	1	10	0	6	12	13	4	3	1	1	0	2
2 — 3	10	2	18	0	15	1	11	0	9	8	9	2	5	3	1	2	0
3 — 4	12	1	7	3	13	4	8	0	15	12	8	8	6	7	2	4	0
4 — 5	7	2	12	1	11	0	9	0	9	4	11	5	2	5	2	3	0
5 — 6	4	0	7	2	7	5	10	1	7	9	8	4	8	1	3	1	0
6 — 7	15	4	6	1	7	2	11	0	10	9	8	4	2	6	0	1	0
7 — 8	12	2	11	4	8	1	7	0	13	4	5	4	2	2	6	1	0
8 — 9	10	3	12	1	7	0	3	2	1	6	8	2	4	2	3	4	1
9 —10	11	5	6	1	11	6	7	0	11	6	3	6	4	4	5	1	0
10 —11	5	1	11	3	9	5	16	1	11	6	7	8	4	3	1	6	0
11 —12	21	0	10	3	7	2	7	0	3	5	3	7	3	0	3	3	2
12 —13	11	3	12	0	10	0	8	0	0	8	5	4	2	1	3	0	1
13 —14	21	3	17	0	11	0	4	0	2	5	8	1	7	3	2	2	0
14 —15	22	1	15	7	15	2	8	1	10	7	8	9	7	2	6	1	0
15 —16	24	0	22	0	11	1	7	0	5	5	8	4	3	1	3	1	0
16 —17	10	2	14	0	9	0	11	0	9	11	12	10	6	3	4	1	0
17 —18	16	0	13	1	8	0	7	0	8	7	4	6	5	3	1	0	0
18 —19	7	0	19	0	19	1	12	0	14	12	9	10	0	4	0	1	1
19 —20	14	2	16	0	16	2	11	0	19	12	9	4	3	4	2	1	0
20 —21	10	0	15	2	16	1	13	0	14	16	8	7	9	4	4	0	0
21 —22	12	0	5	0	9	0	11	1	10	8	15	5	5	3	3	2	1
22 —23	10	1	12	1	11	2	6	1	9	2	6	7	1	7	3	2	0
23 —24	14	0	13	0	13	1	4	0	13	8	8	4	2	4	1	2	1
	296	34	294	30	264	38	206	7	213	187	190	133	97	79	61	41	11

A glance over this table shews the great increase of stars in the neighbourhood of the Milky Way and indicates some facts concerning the distribution of the brighter stars. It will be seen that the Milky Way to about —45° is much richer in stars to the $9{\cdot}0^m$ between hours 6–10 than between 17^h—20^h although visually it is much brighter in the latter region, whence it is to be inferred that there is a predominance of very faint stars in the region of Scorpio and Sagittarius which is so bright to the naked eye as compared with Canis Major, Columba, etc., where the Milky Way is faint, but that further south the distribution of stars to the $9{\cdot}0^m$ becomes more equal. It had been intended to shew this graphically but as Mons. W. Stratonoff is already engaged on a much larger scheme which includes this as a part of it, it was therefore abandoned. [See Publications of the Tachkent Observatory, No. 2.]

It seems worth while to ascertain if the proportion of C.Z. stars $9{\cdot}0^m$ or brighter, but which are under $9{\cdot}0^m$ in the C.P.D. depended on the richness of the different regions. This gave rise to the following table:—

TABLE II.

Proportion of C.Z. stars, therein $9{\cdot}0^m$ or brighter which are under $9{\cdot}0^m$ in the C.P.D. to the total number of stars in C.P.D. $9{\cdot}0^m$ or brighter in percentages arranged according to number of C.P.D. stars per hour per degree. Between —24° and —61° inclusive.

Class shewing number of C.P.D. stars per hour per degree of dec.	No. of C.P.D. stars to $9{\cdot}0^m$.	No. of C.Z. stars to $9{\cdot}0^m$ but under $9{\cdot}0^m$ in C.P.D.	Percentage.
From 0 — 25 Stars.	792	115	14·5
26 — 50	13164	1555	11·8
51 — 75	15792	2409	15·3
76 —100	14324	2122	14·8
101 —125	6535	974	14·9
126 —150	4359	569	13·1
151 —275	660	65	12·6
176 —200	1302	156	12·0
201 —225	844	104	12·3
226 —250	234	22	9·4

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The C.P.D. mags. depend on Gould's C.Z. Hence, if Gould, in rich regions, only observed a few of the 9·0 mag. stars his percentage to those of the C.P.D. would be smaller in such. The above table shews that this actually occurred but not to the extent that might have been expected.

In Vol. III. of the C.P.D. Kapteyn gives an enumeration of all stars per zone of one degree of dec. which is repeated below in Table III.

Table III. gives for each degree of south declination, the number of stars to the $9{\cdot}0^m$ in Schönfeld's B.D. (for $-0°$ and $-1°$ Argelander's B.D.) taken from Seeliger and for the C.P.D. from Table I. It further gives the total number of stars in the C.P.D. and the percentage of $9{\cdot}0^m$ or brighter stars to that number—here excluding the C.Z. $9{\cdot}0^m$ stars which are fainter than $9{\cdot}0^m$ in the C.P.D. Other columns give the average number of stars to the $9{\cdot}0^m$ per square degree from the B.D. and the C.P.D.

Mons. W. Stratonoff (Publications of the Tachkent Observatory, No. 2) gives the average number of stars to $9{\cdot}0^m$ inclusive in the B.D. from $+90°$ to $-20°$ as 4·895 per square degree. As will be seen below the C.P.D. between $-19°$ and $-90°$ gives 5·85 or nearly a unit more and this excludes over 9800 stars estimated as 9·0 or brighter by Gould but which are fainter than $9{\cdot}0^m$ on the C.P.D. plates. It would be very interesting if we knew that this richness of the Southern Heavens was real, but it is very doubtful—it is much more likely due to a change of light scale. A very incomplete comparison with the Cordoba Durchmusterung (again to $9{\cdot}0^m$ inclusive) shews that the latter is richer away from the Milky Way but poor in that galaxy as compared with the C.P.D. My belief is that this is not due to greater actinic light of milky way stars but to the fact that in brilliant fields the eye is apt to rate as $9{\cdot}0^m$ stars which in a sparse field would be reckoned about $8{\cdot}8^m$ or even brighter.

TABLE III.

South Declination.	Area of Zone in Square Degrees.	Number of Stars in B.D. to $9{\cdot}0^m$ inclusive.	Number per Square Degree.	Number of Stars in C.P.D. to $9{\cdot}0^m$ inclusive.	Number per Square Degree.	C.Z. Stars $\geq 9{\cdot}0^m$ but $< 9{\cdot}0^m$ in C.P.D.	Total of Stars of all mags. in C.P.D.	Percentage of Column 5 to Column 8.	
0°	360·0°	1566	4·35						
1	359·9	1605	4·46						
2	359·7	1536	4·27						
3	359·3	1510	4·20						
4	358·9	1585	4·42						
5	358·3	1609	4·49						
6	357·7	1614	4·51						
7	356·9	1612	4·52						
8	356·0	1661	4·67						
9	355·1	1530	4·31						
10	354·0	1619	4·57						
11	352·8	1625	4·61						
12	351·5	1625	4·62						
13	350·1	1588	4·54						
14	348·5	1641	4·71						
15	346·9	1714	4·94						
16	345·2	1689	4·89						
17	343·3	1682	4·90						
18	341·4	1659	4·86				491		
19	339·4	1653	4·87	1909	5·62		8448	22·6	
20	337·2	1686	5·00	1844	5·47		8559	21·6	
21	334·9	1690	5·05	1843	5·50		8323	22·1	22·2
22	332·6	1591	4·78	1892	5·69	25	8432	22·4	
23	330·1			1870	5·66	145	8376	22·3	

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TABLE III.—*continued.*

South Declination.	Area of Zone in Square Degrees.	Number of Stars in B.D. to $9^{\cdot}0^{m}$ inclusive.	Number per Square Degree.	Number of Stars in C.P.D. to $9^{\cdot}0^{m}$ inclusive.	Number per Square Degree.	C.Z. Stars $\geq 9^{\cdot}0^{m}$ but $< 9^{\cdot}0^{m}$ in C.P.D.	Total of Stars of all mags. in C.P.D.	Percentage of Column 5 to Column 8.	
24°	327·5			1699	5·19	193	7513	22·6	
25	324·9			1685	5·19	153	7617	22·1	
26	322·2			1785	5·54	219	7545	23·7	22·9
27	319·3			1812	5·68	225	7607	23·8	
28	316·4			1737	5·49	244	7750	22·4	
29	313·3			1652	5·27	266	6927	23·9	
30	310·2			1564	5·04	248	6857	22·8	
31	306·9			1580	5·15	211	6897	22·9	24·0
32	303·6			1724	5·68	223	6721	25·7	
33	300·2			1597	5·32	267	6442	24·8	
34	296·6			1587	5·35	266	9339	17·0	
35	293·1			1556	5·31	218	9481	16·4	16·8
36	289·4			1645	5·68	194	9839	16·7	
37	285·6			1602	5·61	175	9437	17·0	
38	281·7			1397	4·96	306	8604	16·3	
39	277·8			1344	4·95	233	9318	14·2	
40	273·7			1533	5·60	208	9912	15·5	15·2
41	269·6			1563	5·80	148	10007	15·6	
42	265·4			1445	5·45	241	9663	14·5	
43	261·1			1365	5·23	235	9815	13·9	
44	256·8			1430	5·57	281	10406	13·7	
45	252·3			1529	6·06	243	10518	14·5	14·4
46	247·8			1599	6·45	236	10625	15·0	
47	243·2			1488	6·12	237	10081	14·8	
48	238·5			1672	7·01	207	11012	15·2	
49	233·8			1681	7·19	183	11858	14·2	
50	229·0			1702	7·43	184	11905	14·3	14·3
51	224·1			1694	7·56	150	12075	14·0	
52	219·2			1696	7·74	166	12255	13·8	
53	214·1			1363	6·37	212	10591	12·9	
54	209·1			1418	6·78	225	10431	13·6	
55	203·9			1428	7·00	197	10161	14·1	13·7
56	198·7			1442	7·26	231	10225	14·1	
57	193·4			1456	7·53	207	10427	14·0	
58	188·1			1694	9·01	197	8131	20·8	
59	182·7			1589	8·70	209	7957	20·0	
60	177·3			1558	8·77	229	7721	20·1	19·7
61	171·8			1306	7·60	202	6795	19·2	
62	166·2			1197	7·20	117	6468	18·5	
63	160·6			1053	6·56	145	4949	21·3	
64	155·0			908	5·83	95	4404	20·6	
65	149·3			855	5·73	73	4199	20·4	20·5
66	143·5			790	5·50	103	3825	20·7	
67	137·8			785	5·70	122	3999	19·6	
68	131·9			780	5·91	100	3599	21·7	
69	126·1			689	5·46	97	3349	20·6	
70	120·2			635	5·40	99	3038	20·9	20·9
71	114·2			578	5·06	95	2787	20·7	
72	108·3			579	5·35	66	2802	20·7	

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TABLE III.—*continued.*

South Declination.	Area of Zone in Square Degrees.	Number of Stars in B.D. to $9{\cdot}0^m$ inclusive.	Number per Square Degree.	Number of Stars in C.P.D. to $9{\cdot}0^m$ inclusive.	Number per Square Degree.	C.Z. Stars $\geqq 9{\cdot}0^m$ but $< 9{\cdot}0^m$ in C.P.D.	Total of Stars of all mags. in C.P.D.	Percentage of Column 5 to Column 8.	
73°	102·2			494	4·83	62	2349	21·0	
74	96·2			422	4·39	62	2136	19·8	
75	90·1			376	4·17	42	1830	20·5	19·7
76	84·0			308	3·67	49	1639	18·8	
77	77·9			296	3·80	34	1600	18·5	
78	71·8			294	4·10	30	1485	19·8	
79	65·6			264	4·02	38	1250	21·1	
80	59·4			206	3·47	7	1083	19·0	20·3
81	53·2			213	4·00		1050	20·3	
82	47·0			187	3·98		908	20·6	
83	40·8			190	4·66		761	25·0	
84	34·5			133	3·43		661	20·1	
85	28·2			97	3·43		560	17·3	20·2
86	22·0			79	3·65		426	18·5	
87	15·7			61	3·88		349	17·5	
88	9·4			41	4·35		213	19·3	18·1
89	3·1			11	3·50		62	17·8	
				81481	5·85	9877	454875	18·0	

The plates of the C.P.D. were taken in 15 zones, each about 5° deep in declination; the limits of these zones are indicated by the horizontal lines.

Is it possible to clearly distinguish between stars of say the 9·0 and 9·1 magnitude with prolonged exposures? It seems possible that there might be some tendency for such small differences of magnitude to disappear. The last two columns of Table III. indicate that this is not so, as the poorer plates have a larger percentage of stars to the $9{\cdot}0^m$ as they ought to have.

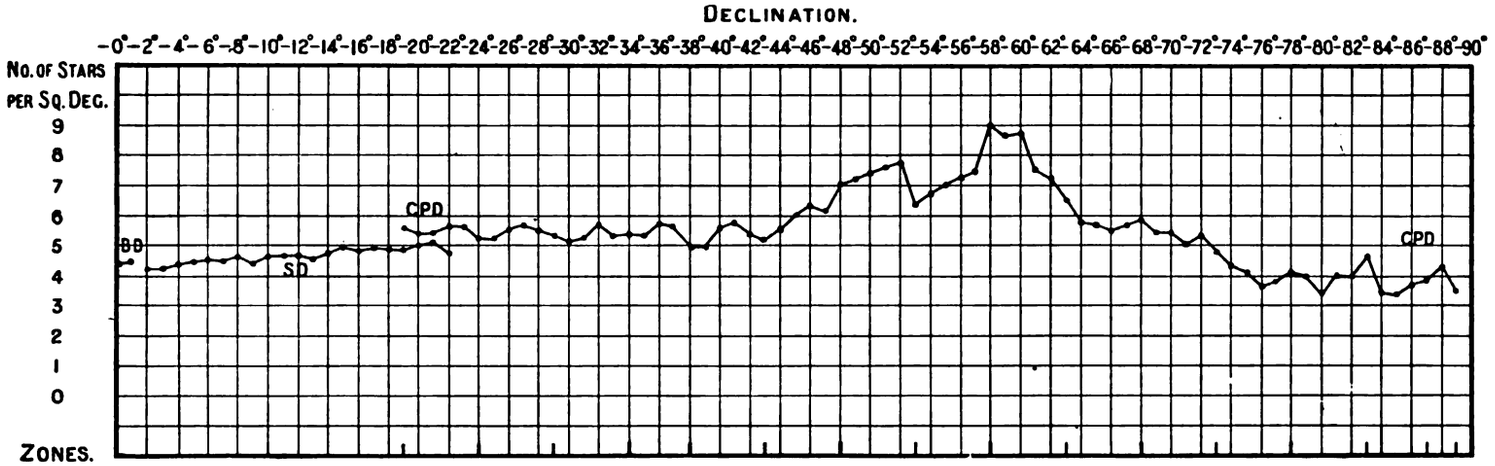
From Table III. it appears that there are, including the C.Z. stars to 9·0 mag. inclusive,

91,358 stars

between −19° and the South Pole.

The annexed diagram shews graphically the density of stars to the $9{\cdot}0^m$ in the Southern hemisphere, excluding those C.Z. $9{\cdot}0^m$ stars which are fainter than $9{\cdot}0^m$ in the C.P.D.

Number of Stars to $9{\cdot}0^m$ inclusive per Square Degree taken from Table III.



B.D. and S.D. = Argelander's and Schönfeld's Bonner Durchmusterung.
C.P.D. = Cape Photographic Durchmusterung.

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The only marked discontinuity occurs in the Zone $-53°$ $-58°$, where the deficiency of stars to the 9th mag. is about 1·5 per square degree. To all magnitudes this zone is the second richest (viz., 50·9 stars, whereas the previous zone is 51·6 per square degree). This deficiency, which must be real, is very remarkable. Table No. I. shews that the shortage takes place mainly from 14^h to 17^h R.A., and that the proportion of Gould stars $\geqq 9{\cdot}0^m$ but $< 9{\cdot}0^m$ in C.P.D. is very large. It is true that the limits of this deficiency coincide with one belt of plates, but it is difficult to see why this belt should be so short of stars to the $9{\cdot}0^m$ from photographic causes.

The richest part of the Southern sky is near η Argus. Referring to Table I. $-58°$, it will be seen that there are no less than 256 stars to the $9{\cdot}0^m$ between 10^h and 11^h, or 32·7 per square degree, and between the same hours in Zone $-59°$ the number is 32·2 per square degree.

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ANNALS OF THE CAPE OBSERVATORY, VOL. IX.

REVISION

OF THE

CAPE PHOTOGRAPHIC DURCHMUSTERUNG,

PART III.

ERRATA IN SOUTHERN STAR CATALOGUES

(SOUTH OF -19° DECLINATION).

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PREFACE.

Professor J. C. Kapteyn detected numerous errors in the published Star Catalogues which he consulted in the course of his work on the Cape Photographic Durchmusterung. A complete list of these was forwarded by him to this Observatory.

Before publishing this list it was deemed advisable to add to it other errors which had been previously published, or which had been discovered here at different times. Hence the following lists should be fairly complete—as far as our present knowledge goes. The mode of construction was sufficiently simple—a copy of each catalogue concerned was corrected, and a list then made from it.

The work has been enriched by numerous corrections and additions by Dr F. W. Ristenpart of the *Bureau der Commission für die Geschichte des Fixsternhimmels.* With great kindness, Dr Ristenpart looked over the proof sheets and added many errata only previously known to himself.

All positions are given for 1875, unless otherwise specified.

As this work has only been undertaken in connection with the C.P.D., errors in star places north of $-19°$ Declination are not included, except in a few special cases.

Besides these errata, the existence of some others has either been proved, or shewn to be very probable, by the Revision forming Part I. of this volume; and it should be consulted in cases of doubt.

In many cases, the correction of a star-position implies that the catalogued precessions are erroneous. These consequential errors are only occasionally corrected.

A short index to the various publications containing lists of errata in Southern Star Catalogues is also included.

R. T. A. INNES.

18*th December* 1902.

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ERRATA IN SOUTHERN STAR CATALOGUES.

ERRATA I.—STONE'S CAPE CATALOGUE FOR 1880 = S.

Page.	Star.	For	Read.	Authority, Remarks, etc.
V.	line 3	May 13	May 27	
XXIX.		South	North	Line 2. Delete "but although" and from "there are" to end of sentence on line 3.
2		11	10	Footnote.
3	44	22′	25′	Kapteyn:—Proved by identity with Lac. 9759.
15	280	−79″·780	−19″·780	
17	317	Piazzi 190	189	
,,	,,	Melbourne 1870...	55*	
27	557	Cape (1860) 94	Melbourne (1870) 94	
,,	563	,, ,, 95	,, ,, 95	
31	638	,, (1840) ...	128	And delete the reference to previous star.
35	763	,, ,, ...	165	And delete the reference to previous star.
36	800	+3ˢ·0748	+3ˢ·0970	
40	896			Kapteyn:—S. 1875, 51ˢ·3, G. 57ˢ·1, C.P.D. 56ˢ·5, therefore S. about 6$^{sec.}$ too small.
44	970	Moesta 143	144	Footnote.
46	1025	37ˢ·28	37ˢ·49	A.N. 112, p. 63.
,,	,,	+2ˢ·4880−0ˢ·0008	+2ˢ·5974−0ˢ·0013	,, ,, ,,
,,	,,	+0″·226	+0″·236	,, ,, ,,
49	1078	}		Tebbutt:—Transpose the N.P.D.'s of these two stars. (A.N. 117, p. 47).
	1079	}		
51	1093	−15″·537	−15″·534	
53	1163	Cape (1840) 270	...	
,,	,,	Rumker 87	...	Footnote:—Delete. It is not R. 87.
55	1215	Taylor 995	...	
57	1216	,, ...	995	
58	1277	8ˢ·68	7ˢ·68	
61	1341	Brisbane 1010	...	
65	1422	,, ...	546	
68	1487	33ˢ·99	31ˢ·07	Error pointed out by Kapteyn.
,,	,,	+ 2ˢ·5588	+1ˢ·093 (roughly)	Kapteyn.
,,	,,	+ 0ˢ·0025	+ 0ˢ·0190	
69	,,	+ 0″·302	+ 0″·132	
73	1578	Brisbane ...	596	
79	1726	Brisbane ...	647	
81	1766	13′	14′	
82	1830	+ 0ˢ·8891	+ 0ˢ·8895	
87	1929	Cape 1840 ...	457	
89	1936	Melbourne ...	224	
92	2050	+ 0ˢ·0014	+ 0ˢ·0064	
93	2027	Brisbane ...	760	
97	2156	Brisbane ...	826	Kapteyn.
103	2265	Footnote	Delete	
105	2298	55′	56′	A.N. 112, p. 63.
,,	2332	Brisbane ...	915	

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ERRATA I.—STONE'S CAPE CATALOGUE FOR 1880=S.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
105	2339	Brisbane ...	918	
107	2352	Cape 1840 ...	539	
119	2652	,, 1860 ...	214	
123	2724	,, 1840 ...	651	
125	2758	,, ,, ...	650	
,,	2779	,, ,, ...	...	
,,	2780	,, ,, ...	642	
127	2809	Brisbane ...	1155	
130	2882	$32^s.86$ $23''.45$	$31^s.26$ $22''.58$	Error in R.A. pointed out by Kapteyn.
133	2941	$159°\ 6'\ 20''.04$	Delete	This star was not observed in dec. It is C.Z. VI. 808=C.P.D.—69°590. Error pointed out by Kapteyn. (The dec. given is that of S. 2963).
144	3214	$-0^s.0030$	$-\ 0^s.0693$	
146	3255	Carinæ B.	Carinæ A.	
147	3284	} Same star		Kapteyn:—At least in no double star list.
,,	3285			
151	3373	Brisbane 1441	1450	Or=p. 1441 + 1^m.
165	3670	,, ...	1627	
167	3695	,, ...	1641	
,,	3704	,, ...	1644	
169	3743	,, ...	1662	
173	3847	Taylor 3212	3211	
,,	3848	,, ...	3212	
,,	3857	,, 3243	3233	
,,	3859	Brisbane ...	1738	
175	3878	33′	28′	Kapteyn:—Star identical with Lac. 3038.
176	3945	$19^s.03$ $45''.03$	$12^s.84$ $51''.39$	A.N. 112, p. 63.
181	4013	Brisbane ...	1832	
183	4069	Melbourne 394	...	
191	4260	Brisbane ...	1970	
,,	4275	49′	19′	Kapteyn:—Proved by identification with Lac. 3286.
192	4292	$+1^s.6799$	$+1^s.6782$	
199	4419	Brisbane 2062	...	
,,	4422	,, 2061	2062	
206	4635	$-2^s.3820$	$+2^s.3820$	
207	4611	Brisbane 2191	2189	Kapteyn.
229	5098	,, 2512	2511	
235	5253	,, ...	2612	
237	5301	149°	148°	Kapteyn.
252	5666	$+3^s.0688$	$+3^s.0367$	
253	5630	Taylor 4613	4610	
,,	,,	Brisbane 2947	2944	
,,	5632	Taylor 4610	4613	
,,	5650	Brisbane 2964	2966	
,,	5654	,, 2966	2971	
255	5674	,, 2983	2986	Or p. 2983 + 10^s. [Ristenpart.]
257	5730	Melbourne 1870...	523	
258	5776	$4^{mag.}$	$8^{mag.}$ ±	
264	5906		Delete	There is no star here. α belongs to 5907, δ belongs to 5977.
273	6096	Taylor 5007	...	
,,	6100	,, ...	5007	
,,	6119	Melbourne 1870...	550	
275	6126	Cape 1860 ...	442	
,,	6146	,, 1840 ...	1387	
277	6182	Brisbane ...	3415	
281	6264	Taylor ...	(5145)	Kapteyn (t 1^m in error).
282	6308	$44^s.28$	$41^s.28$	Also noticed by Kapteyn.
284	6369	$5^s.93$	$6^s.93$	
285	6347	Cape 1840 ...	1423	
287	6433	Melbourne 1870...	568	
,,	6434	,, ,, 568	...	

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ERRATA I.—STONE'S CAPE CATALOGUE FOR 1880 = S.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
287	6412	156°	150°	Kapteyn :—Proved by identification with p. 3635.
301	6711	Cape 1860 ...	478	
303	6763	Brisbane 3936	3931	
307	6856	Brisbane 4003	4005	p. 4003 requires + 10 secs.
,,	6867	160°	162°	Kapteyn:—Proved by identification with Lac. 5111.
308	6926	21^m $57^s.96$	22^m $7^s.96$	Th. and C.P.D. indicate a correction of +10 secs. to the R.A. Original record = $7^s.96$ altered by -10^s evidently in error, 2 wires only.
315	7047	Brisbane 4175	4177	
316	7073	$+0^s.7760$	$+0^s.8150$	
317	7102	Brisbane 4224	4226	
326	7303	$+3^s.6778$	$+3^s.6770$	
329	7358	Brisbane 4463	4462	p. calls 4463 "a very fine nebula" and to S. 7360 there is a footnote "centre of condensation observed." To make these identical p. 4463 requires to be 9′ further south.
331	7419	Brisbane 4516	4518	or p. 4516 + 10 secs. ±.
335	7482	35′	34′	Kapteyn :—Z.C. agrees with C.P.D.
,,	7513	Brisbane ...	4595	
337	7527	Brisbane ...	4607	
341	7638	Cape 1860 ...	559	
351	7862	Brisbane 4907	4898	Kapteyn. [4907 − 1^m· Ristenpart].
352	7888	21^m	22^m	
355	7927	Cape 1860 No. 577	lower one line	
359	8027	Brisbane ...	5036	
367	8222	Brisbane ...	[5183]	
371	8322	Taylor 7135	...	
373	8332	Taylor ...	7135	
377	8420	Brisbane 5350	...	This identification presupposes large errors in p. It seems more likely that p. 5350 is the same star as p. 5346 with an error of $30^{secs.}$
391	8747	Brisbane ...	5588	
393	8809	Cape 1860...	667	
399	8931	Taylor ...	7616	Kapteyn.
407	9100	Brisbane 5334	5834	
408	9142	$0^s.0518$	$0^s.0549$	
409	9140	Brisbane ...	5858	
413	9261	Brisbane ...	[5935]	Ristenpart.
,,	9265	,, 5935	...	,,
423	9455	,, 6045	...	,,
,,	9458	,, ...	[6045]	,,
,,	9467	,, ...	[6061]	,,
,,	9475	Brisbane 6055	...	
,,	9477	,, ...	[6065]	Ristenpart.
,,	9478	,, ...	[6066]	,,
,,	9480	,, ...	[6068]	,,
424	9517	$33^s.75$	$33^s.65$	A.N. 112 p. 63.
435	9725	Cape 1860 ...	766	
437	9803	$-0''.584$	$-0''.534$	
439	9832	Brisbane ...	6295	
442	9916	$+6^s.6247$	$+6^s.4247$	
,,	9922	to read 78·53, 3, 18^h 5^m	$40^s.35$, 133° 10′ 50″·67	By inclusion of 9933 − 1^m.
,,	9933	...	...	No existence; is same star as 9922 with an error of 1^m in R.A.
447	9991	$23''.50$	$57''.78$	Kapteyn has also noticed this error.
451	10085	Fallows ...	275	Is also Henderson 3.
,,	,,	Cape 1860 ...	784	,, ,, Cape 1840, 2302.
457	10227	,, ,, ...	845	
463	10384	$43''.80$	$39''.33$	And lower Melbourne 970 to S 10385.
469	10519	Brisbane 6658	...	Should more probably be p. 6659.

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ERRATA I.—STONE'S CAPE CATALOGUE FOR 1880 = S.—(*continued.*)

Page.	Star.	For	Read.	Authority, Remarks, etc.
469	10529	−6″·926	−6″·909	
478	10723	...	...	This is not Lac. 8276 which is − 2ˢ·7 prec. Lac. 8276 is the variable star RU Sagittarii.
479	10751	Brisbane ...	6778	
481	10773	122°	112°	A.N. 112 p. 63. Printing error.
484	10852	Lac. ...	8391	
,,	10861	4 Capricorni	5 Capricorni	
,,	10870	Lac. 8391	...	
,,	Footnote.	10870	10852	
488	10968	Octantis	Octantis μ_2	
490	11011	...	...	This star has p.m. = +0ˢ·03 −0″·4.
494	11088	Lac. ...	Lac. [8589]	
497	11126	161°	160°	Kapteyn:—Proved by identification with Lac. 8588. Printing error.
502	11276	6mag.	5·6	
,,	,,	5·6	78·78	
,,	,,	78·78	3	
505	11301	Johnson ...	496	Is also Henderson 1.
,,	,,	Cape 1840 ...	2590	,, ,, Fallows 313.
,,	,,	,, 1860 ...	982	
,,	,,	Melbourne 1870...	1067	
,,	11330	,, ,, 1081	1082	
506	11376	24ˢ·47	23ˢ·62	A.N. 112 p. 63.
,,	,,	+4ˢ·0219	+3ˢ·7404	
,,	,,	−0ˢ·0467	−0ˢ·0303	
507	,,	128°	138°	
,,	,,	−0″·366	−0·340	
,,	11342	21″·07	51″·22	This error was noted by Tebbutt and Kapteyn.
509	11401	−15″·810	−15″·806	
515	11542	Cape 1840 ...	2734	
516	11609	+3ˢ·2407	+3·2447	A.N. 112 p. 63.
519	11637	Brisbane 1	Piazzi 1	
521	11683	Brisbane 7153	...	Ristenpart.
527	11799	Piazzi ...	146	
533	11965	54″·82	16″·39	A. N. 112 p. 63.
535	Footnote.	12002	...	This is Lac. 9352, but it has large P.M. of about +0ˢ·567 in R.A. and −1″·31 in N.P.D.
538	12069	+12ˢ·3144	+12ˢ·1040	
,,	,,	−6ˢ·4465	−6ˢ·1793	
539	,,	−0″·386	−0″·379	
549	12318	Brisbane ...	7337	Kapteyn.
551	12331	,, ...	7338	Ristenpart.
,,	12359	,, ...	7349	Kapteyn.
553	12379	,, 7357	...	Bracket 7356.
554	12436	+3ˢ·0773	+3ˢ·0780	
555	12436	149°	151°	Kapteyn.
560	5810	1237	1327	

No attention is called to errata such as No. 4159 footnote on page 186 which seem to have been corrected by hand in all copies.

Many Lacaille stars are differently identified by Stone and Gould. Gould's papers on errors in Lacaille in the *Astronomical Journal* may be referred to.

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ERRATA II.—CORDOBA ZONE CATALOGUE. = C.Z. PART I.

The authority C.—R. indicates that the erratum in question has been submitted by Dr Ristenpart to Dr Thome at Cordoba, and either approved or amended.

Page.	Star.	For	Read.	Authority, Remarks, etc.
6	0^h 589	$5^s.29$	$6^s.29$	Cordoba Results, vol. xviii.
9	799	$30^m\ 16^s.78$	$29^m\ 19^s.84$	,, ,, ,, ,, But the correction to the min. seems to be erroneous. See page 1A. Missings Stars No. 5.
,,	,,	30′ 27″·9	32′ 28″·1	,, ,, ,, ,,
,,	802	30^m	31^m	,, ,, ,, ,,
,,	836	$42^s.82$	$43^s.82$	,, ,, ,, ,,
11	1000	$4^s.39$	$9^s.79$	Kapteyn C.P.D. (confirmed by *g* which gives 1875, $10^s.5$). C.—R.
13	1252	43″·7	53″·7	Kapteyn. ,,
18	1^h 169	$35^s.11$	$35^s.53$	Cordoba Results, vol. xviii.
19	189	4′	0′	Kapteyn C.P.D. (confirmed by *g*.). C.—R.
,,	210	$9^m\ 18^s.93$	$8^m\ 18^s.93$	Cordoba Results, vol. xviii.
,,	221	$8^m\ 37^s.42$	$9^m\ 37^s.42$	,, ,, ,, ,,
20	296	$11^m\ 35^s.40$	$10^m\ 35^s.40$	,, ,, ,, ,, [48B.
22	511	34″·6	[42″ ±]	See Parallax of α Eridani, Cape Annals, vol. viii. p.
,,	564	$4^s.52$—33° 10′ 27″·3	$4^s.59$—32° 45′ 27″·0	Cordoba Results, vol. xviii.
28	1124	$32^s.42$	$18^s.82$	,, ,, ,, ,, But in this corrected position the star is lacking both in Cor. D.M. and C.P.D. See Missing Stars No. 10 page 1A.
,,	,,	38′ 3″·7	47′ 3″·8	
29	1190	$15^s.55$	$14^s.55$	Cordoba Results, vol. xviii.
33	1584	$11^s.95$	$11^s.21$	,, ,, ,, ,,
38	2^h 291	41′	40′	,, ,, ,, ,,
,,	295	29′	30′	Kapteyn :—Dec. given in C.P.D. certainly correct. C.—R. :—No error found, but probably 30′.
,,	302	52′	53′	Cordoba Results, vol. xviii.
39	408	$32^s.95$	$31^s.95$	,, ,, ,, ,,
41	588	32″·7	42″·7	,, ,, ,, ,,
,,	659	$45^s.02$	[$40^s.02$]	Kapteyn :—C.P.D. gives $39^s.9$; g to 1875, $39^s.6$.
45	973	21″·8	27″·8	Cordoba Results, vol. xviii.
,,	1030	$23^s.51$	$44^s.69$	,, ,, ,, ,,
49	1445	(50^s)	52^s	Same as No. 1448. In Cordoba Results, vol. xviii. erroneously. Ristenpart.
50	1478	$8^s.51$	$9^s.51$	Cordoba Results, vol. xviii.
,,	1517	41′	40′	,, ,, ,, ,,
51	1617	57^s	$50^s.5$ ±	C.P.D.
53	3^h 156	$7^s.84$	$12^s.84$	Cordoba Results, vol. xviii. Same as No. 161.
,,	162	$15^s.71$	$12^s.71$	,, ,, ,, ,,
55	262	...	...	C.—R. :—Tally V. instead of III. gives about -65^s = C.P.D. −65°, 220.
,,	299	...	...	Kapteyn :—Dec. to be corrected by − 30′?
58	600	17′	16′	,, Dec. correct in the zones, same error in G.
59	656	s. pr.	s. sq.	Cordoba Results, vol. xviii.
62	925	53′	23′	,, ,, ,, ,,
63	1027	$11^s.25$	$7^s.14$	,, ,, ,, ,,
64	1069	$42^s.28$	$43^s.28$	,, ,, ,, ,,
67	1339	35′	39′	,, ,, ,, ,,
70	1684	7″·2	17″·2	,, ,, ,, ,,
71	1717	9 mag.	7 mag.	,, ,, ,, ,,
,,	1759	$57^m\ 20^s.17$, 27″·4	$58^m\ 29^s.78$, 27″·6	Kapteyn :—Tally III. instead of VI. C.—R.
75	4^h 188	30′ 4″·6	29′ 54″·6	Cordoba Results, vol. xviii.
,,	207	28′	58′	,, ,, ,, ,,
,,	236	27″·9	17″·9	,, ,, ,, ,,
76	332	$27^s.87$	$26^s.87$	,, ,, ,, ,,
77	419	29″·7	19″·7	Cordoba Results, vol. xviii.
78	476	7½ mag.	9½ mag.	,, ,, ,, ,,
,,	515	$54^s.04$	$53^s.04$	,, ,, ,, ,,
81	786	47″·7	17″·7	,, ,, ,, ,,
82	825	$49^s.24$	$48^s.24$	,, ,, ,, ,,

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ERRATA II.—CORDOBA ZONE CATALOGUE. =C.Z. PART I.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
86	4^h 1210	...	...	See No. 224, p. 10A. *ante.*
,,	1237	$51^s{\cdot}55$	$41^s{\cdot}55$	Cordoba Results, vol. xviii.
87	1347	$40^m\ 0^s$	$39^m\ 53^s$	Kapteyn. Is also in *g*. C.—R.:—No chron. record.
88	1379	9 mag.	$7\frac{1}{2}$ mag.	Cordoba Results, vol. xviii.
,,	,,	$52^s{\cdot}50$	$31^s{\cdot}49$	
,,	1394	15′	14′	,, ,, ,, ,,
,,	1404	$22^s{\cdot}38$	$24^s{\cdot}38$	,, ,, ,, ,,
,,	1422	$57^s{\cdot}94$	$56^s{\cdot}94$	,, ,, ,, ,,
89	1452	27′	28′	Kapteyn:—Dec. of C.P.D. certainly correct. G. also has 27′, cannot be due to p.m. C.—R.
93	1841	4′	3′	Kapteyn:—Dec. of C.P.D. certainly correct. C.—R.:—No error found.
,,	1859	$42''{\cdot}9$	$32''{\cdot}9$	Cordoba Results, vol. xviii.
,,	1892	13′	12′	Kapteyn:—Dec. of C.P.D. certainly correct. C.—R.
,,	1918	$55^m\ 18^s{\cdot}44$	$56^m\ 18^s{\cdot}43$	Cordoba Results, vol. xviii.
,,	,,	$35''{\cdot}9$	$36''{\cdot}2$	
94	1948	$9\frac{1}{2}$ mag.	$7\frac{1}{2}$ mag.	,, ,, ,, ,,
95	2029	58^m—$52''{\cdot}3$	57^m—$52''{\cdot}0$	C.—R.:—Identical with 1990.
99	5^h 339	$14^s{\cdot}41$	$0^s{\cdot}88$	Cordoba Results, vol. xviii.
100	443	58′	59′	Kapteyn:—Identical with 444.
,,	444	$25^s{\cdot}00$	$24^s{\cdot}69$	C.—R.
102	627	$42^s{\cdot}31$	$43^s{\cdot}31$	Cordoba Results, vol. xviii.
103	688	57′	51′	,, ,, ,, ,,
104	806	$32^\circ\ 31'$	$33^\circ\ 1'$	,, ,, ,, ,, Originally 41′. Probably
105	917	35′	37′	,, ,, ,, ,, [61′.
109	1250	$21^s{\cdot}63$	$23^s{\cdot}63$	,, ,, ,, ,,
,,	1307	57′	37′	,, ,, ,, ,,
110	1349	Zona 102†	Zona 102	,, ,, ,, ,,
,,	1350	,, 182	,, 182†	,, ,, ,, ,,
112	1552	$27^\circ\ 0'$	$26^\circ\ 59'$	,, ,, ,, ,,
113	1683	$29^s{\cdot}23$	$43^s{\cdot}29$	Cordoba Results, vol. xviii. Same as No. 1700.
116	1993	$22''{\cdot}4$	$52''{\cdot}4$	,, ,, ,, ,,
118	2131	...	...	Same star. Cordoba Results, vol. xviii.
,,	2133			
122	6^h 75	$46''{\cdot}9$	$56''{\cdot}9$	Cordoba Results, vol. xviii.
,,	78	$23''{\cdot}3$	$43''{\cdot}3$	,, ,, ,, ,,
128	731	16^m—$14''{\cdot}3$	15^m—$14''{\cdot}1$	Kapteyn. C.—R.
132	1114	...	...	Cordoba Results, vol. xv., for 57′ read 27′, but the C.P.D. confirmed the printed dec. C.—R.
133	1272	$23^s{\cdot}83$	...	Kapteyn:—The C.P.D. has $20^s{\cdot}5$ which agrees with G. C.—R.:—No error found.
135	1482	$31^m\ 51^s{\cdot}61$, $12''{\cdot}5$	$32^m\ 31^s{\cdot}97$, $13''{\cdot}4$	Kapteyn:—No star in Z.C. position on two pr. of plates. In Cordoba Zones read V. instead of VII., and R.A. becomes $32^m\ 31^s{\cdot}96$. C.—R.
136	1587	8 mag.	9 mag.	Cordoba Results, vol. xviii.
,,	1590	$7^s{\cdot}56$	$7^s{\cdot}98$	,, ,, ,, ,,
138	1759	$3^s{\cdot}20$—$0''{\cdot}4$	$21^s{\cdot}39$—$0''{\cdot}7$	,, ,, ,, ,, Same as No. 1772.
140	1923	53′ $48''{\cdot}8$	52′ $43''{\cdot}8$	,, ,, ,, ,, See No. 43, p. 2A. *ante.*
,,	1959	s. sq.	n. sq.	,, ,, ,, ,,
145	2332	25′	26′	Kapteyn:—*g* agrees with C.P.D. C.—R.
,,	2345	$3^s{\cdot}46$—17′	$16^s{\cdot}86$—18′	Cordoba Results, vol. xviii. Same as No. 2355.
146	2479	$14^s{\cdot}14$	$10^s{\cdot}14$	Kapteyn:—C.P.D. gives $9^s{\cdot}5$, *g* reduced to 1875 gives $10^s{\cdot}8$. C.—R.
148	2638	$43''{\cdot}5$	$33''{\cdot}5$	Cordoba Results, vol. xviii.
,,	2677	$30^s{\cdot}68$	$28^s{\cdot}98$	Thome to Ristenpart, from recent observations.
152	3064	$33^s{\cdot}10$	...	Thome has $34^s{\cdot}5$. Kapteyn:—C.P.D. has $38^s{\cdot}2$ and is certainly correct. Cordoba, however, puts "for 35′ $17''{\cdot}4$ read 32′ $47''{\cdot}4$ as in original" (Cordoba Results, vol. xviii.), but there is no star in that position in either C.P.D. or Cor. DM. C.—R.:—No error found.

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ERRATA II.—CORDOBA ZONE CATALOGUE. =C.Z. PART I.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
152	6^h 3065	9½ mag.	9 mag.	Cordoba Results, vol. xviii.
153	3144	$43^s.05$	$41^s.88$	Thome to Ristenpart.
154	7^h 29	22″·6	32″·6	Cordoba Results, vol. xviii.
157	372	Not found in two DM. Zones.		*Astr. Journ.* xvi. 30. Is Cor. DM. −43°, 1262. Ristenpart.
158	408	52′	56′	Cordoba Results, vol. xviii.
,,	473	9½ mag.	7½ mag.	,, ,, ,, ,,
159	534	$54^s.22$	$55^s.22$	,, ,, ,, ,,
162	900	...	...	A.N. 3539. "Not found" (Cordoba). Is in C.P.D. mag. 9·1.
163	958	37′	35′	Cordoba Results, vol. xviii.
,,	979	35′	31′	Kapteyn:—In Cordoba Zones, dec. = 41′. In transferring to Z.C., a correction of 10′, instead of a correction of 6′ ought probably to have been applied. C.—R.
,,	,,	$54^s.82$	$54^s.98$	
,,	991	9 mag.	9½ mag.	Cordoba Results, vol. xviii.
164	1102	26°	25°	,, ,, ,, ,,
165	1169	$44^s.53$—41′	$44^s.71$—40′	Kapteyn:—*g* agrees with C.P.D. C.—R.
,,	1183	45′	46′	,, Dec. of C.P.D. certainly correct. G. also in error. W.Z. reduced to 1875 gives 46′ 29″·9. Correction confirmed at Cordoba. Ristenpart.
166	1292	$19^s.75$	$17^s.22$	Cordoba Results, vol. xviii.
168	1500	52′	32′	,, ,, ,, ,,
169	1511	Not found in two DM. Zones.		*Astr. Journ.* xv., 30. Is = C.P.D. −43°, 1450.
170	1683	24° 56′	25° 4′	Cordoba Results, vol. xviii.
171	1713	9½ mag.	7½ mag.	,, ,, ,, ,,
,,	1727	59′	29′	,, ,, ,, ,,
172	1870	...	...	g − C.Z. = + 10″. C.P.D. confirms g. C.—R.:—No error found, probably 41″·9.
,,	1871	2′ 29″·0	21′ 59″·5	Cordoba Results, vol. xviii.
174	2044	$55^s.23$	$54^s.92$	Cordoba to Ristenpart.
,,	2081	$25^s.76$	$22^s.36$	Cordoba Results, vol. xviii. Kapteyn:—C.P.D. has $22^s.2$. Thome has $22^s.4$.
175	2088	6½ mag.	7 mag.	Cordoba Results, vol. xviii.
176	2206	$6^s.12$	$4^s.69$	,, ,, ,, ,, Same as No. 2202.
,,	2241	9 mag.	7 mag.	,, ,, ,, ,,
,,	2270	35′ 52″·5	27′ 52″·3	Kapteyn:—Dec. of C.P.D. certainly correct. There is another star in C.P.D. $9·8^m$ 7^h 32^m $1^s.8$ −35° 35′·8, which Thome identifies as the Z.C. star.
177	2355	27′ 27″·8	33′ 27″·9	Cordoba Results, vol. xviii. C.P.D.−23°, 2525 is close to the corrected position, and thus takes the Ref. 9·5 of 2523.
179	2503	$7^s.24$	4^s 24	Cordoba Results, vol. xviii.
180	2561	$47^s.09$	$33^s.05$	,, ,, ,, ,, Same as No. 2543.
181	2681	$18^s.46$	$18^s.12$	Cordoba to Ristenpart.
182	2812	$1^s.36$—32′ 47″·3	$14^s.53$—33′ 17″·3	,, ,, ,, Tally II. instead of III. Same star as 2834.
184	2954	$46^s.30$—27″·4	$27^s.25$—27″·2	Cordoba Results, vol. xviii. Same as No. 2926.
,,	3026	34′ 41″·1	54′ 41″·5	A.N. 3539.
185	3061	37′	35′	Cordoba Results, vol. xviii.
186	3166	$14^s.86$	$7^s.86$	,, ,, ,, ,,
,,	3185	$32^s.36$	$42^s.36$	,, ,, ,, ,,
187	3269	41°	40°	,, ,, ,, ,,
191	3685	...	...	Same star as No. 3681. Cordoba Results, vol. xviii.
194	3933	See No. 56, p. 3A, *ante*.		C.—R.:—Probably Cor. DM. No. 6244.
195	4072	$11^s.55$	$7^s.97$	Cordoba Results, vol. xviii.
196	4141	$1^s.70$—3″·4	$15^s.60$—3″·7	,, ,, ,, xvii. p. 540.
197	4226	47° 58′ 38″·1	48° 0′ 44″·1	,, ,, ,, xviii. Is C.P.D. −48°, 1389.
198	4342	$4^s.81$	$2^s.20$	,, ,, ,, ,, Same as No. 4335.
200	4484	$33^s.96$	$36^s.31$	Cordoba to Ristenpart.
,,	4489	41′	49′	Cordoba Results, vol. xviii. Is C.P.D.−26°, 2967.

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ERRATA II.—CORDOBA ZONE CATALOGUE. =C.Z. PART I.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
200	7^h 4523	$59^m\ 1^s{\cdot}95$	$58^m\ 51^s{\cdot}95$	Cordoba Results, vol. xviii.
,,	4532	$9^s{\cdot}99$	$9^s{\cdot}83$	,, ,, ,, ,,
,,	4538	$13^s{\cdot}37$	$11^s{\cdot}37$	,, ,, ,, ,,
202	8^h 55	$37'\ 57''{\cdot}7$	$38'\ 7''{\cdot}7$	,, ,, ,, ,,
,,	79	$59^s{\cdot}67$	$57^s{\cdot}28$	,, ,, ,, ,,
206	410	$11^s{\cdot}06—48''{\cdot}3$	$25^s{\cdot}89—48''{\cdot}2$	,, ,, ,, ,,
207	545	$4'$	$5'$	,, ,, ,, ,,
208	704	$34^s{\cdot}67$	$19^s{\cdot}41$	,, ,, ,, ,,
209	752	...	...	,, ,, ,, ,, Same star as No. 750.
210	829	10^m	11^m	,, ,, ,, ,, Same as No. 913.
212	1062	$53^s{\cdot}96—12'$	$45^s{\cdot}4—2'$	Kapteyn :—In Cordoba Zones $\delta=2'$; if further we read wire V. instead of III. the place becomes identical with C.P.D.—Cordoba Results, vol. xviii. remarks this star "does not exist."
,,	1082	$7^s{\cdot}83$	$7^s{\cdot}61$	Cordoba to Ristenpart.
,,	1092	$52'$	$53'$	Cordoba Results, vol. xviii.
214	1282	$52'$	$48'$	,, ,, ,, ,,
,,	1308	"Not found	in DM."	,, ,, ,, ,,
,,	,,	$15^m\ 55^s{\cdot}02—45''{\cdot}9$	$16^m\ 48^s{\cdot}08—45''{\cdot}3$	Kapteyn :—If wire II. is taken instead of V. then $\alpha = 16^m\ 48^s{\cdot}14$ and is in C.P.D. C.—R.
216	1433	$16^s{\cdot}19$	$16^s{\cdot}40$	Cordoba to Ristenpart.
,,	1484	$51^s{\cdot}04$	$51^s{\cdot}15$	,, ,, ,,
219	1736	$24'$	$25'$	Kapteyn :—Dec. of C.P.D. certainly correct. C.—R. :—No error found, probably $25'$.
,,	1807	$45^s{\cdot}37$	$45^s{\cdot}19$	Cordoba to Ristenpart.
224	2246	$28°\ 10'$	$27°\ 50'$	Cordoba Results, vol. xviii.
,,	2312	$41^s{\cdot}66$	$[40^s{\cdot}66]$	Kapteyn :—R.A. must be $40^s{\cdot}66$, see C.P.D. G., a., etc. C.—R. :—Bad observing in Zone.
225	2384	28^m	29^m	Cordoba Results, vol. xviii. Same as No. 2472.
,,	2418	$9\frac{1}{2}$ mag.	$7\frac{1}{2}$ mag.	,, ,, ,, ,,
228	2657	$59^s{\cdot}60—14''{\cdot}3$	$16^s{\cdot}17—14''{\cdot}6$	,, ,, ,, ,, Is C.P.D. —53°, 1755.
229	2770	$15^s{\cdot}91$	$13^s{\cdot}85$	Cordoba to Ristenpart.
,,	2779	$21^s{\cdot}64$	$23^s{\cdot}41$	Cordoba Results, vol. xviii.
232	3084	$28^s{\cdot}91$	...	C.P.D. $=37^s{\cdot}7$. Thome $=37^s{\cdot}1$. Cordoba Results, vol. xviii. remarks "does not exist."
233	3161	$34^s{\cdot}07$	$32^s{\cdot}59$	Cordoba Results, vol. xviii.
,,	3216	$18'$	$16'$	Cordoba to Ristenpart.
234	3312	$25'$	$21'$	Kapteyn :—g agrees with that of C.P.D. C.—R.
235	3376	$5^s{\cdot}46$	$[6^s{\cdot}46]$	,, R.A. must be $6^s{\cdot}46$ to agree with G. and S. C.—R. :—Zone 222 No. 57, poor obs., No. 53 gives $6^s{\cdot}98$.
236	3489	$34^s{\cdot}18$	$47^s{\cdot}42$	Cordoba Results, vol. xviii.
238	3705	$59''{\cdot}4$	$39''{\cdot}4$	C.—R.
239	3838	$58^s{\cdot}35$	$56^s{\cdot}35$	Cordoba Results, vol. xviii.
243	4211	$58'$	$54'$	,, ,, ,, ,,
246	4472	$17^s{\cdot}50$	$27^s{\cdot}50$	,, ,, ,, ,, Same as No. 4487.
247	4583	$31^s{\cdot}62$	$28^s{\cdot}36$	,, ,, ,, ,, ,, ,, No. 4573.
,,	4591	$6'$	$10'$	Cordoba to Ristenpart.
248	4704	$1^s{\cdot}56$	$1^s{\cdot}26$	Cordoba Results, vol. xviii
249	4760	$17'\ 51''{\cdot}9$	$[16'\ 51''{\cdot}9]$	Kapteyn :—C.P.D. $17'{\cdot}0$ certainly correct. Thome has $17'{\cdot}2$. Being reobserved with Cape T.C. C.—R. : — No error found, but probably $16'$.
,,	4770	$56^s{\cdot}39$	$58^s{\cdot}39$	Cordoba to Ristenpart.
252	9^h 85	$3^s{\cdot}16$	$37^s{\cdot}38$	Kapteyn :—In Cordoba Zones read III. instead of V. C.P.D. $=38^s{\cdot}3$. [C.—R. :—$\delta = 14''{\cdot}6$]?
253	198	$61°\ 56'$	$62°\ 16'$	Cordoba Results, vol. xviii.
255	349	$47'$	$51'$	,, ,, ,, ,,
,,	355	$12^s{\cdot}24—20''{\cdot}1$	$41^s{\cdot}63—20''{\cdot}4$	Kapteyn :—Star identical with No. 396. In Cordoba Zones read V. instead of VI. C.—R.
256	502	$9^s{\cdot}57$	$13^s{\cdot}27$	Cordoba Results, vol. xviii.

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ERRATA II.—CORDOBA ZONE CATALOGUE. = C.Z. PART I.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
259	9^h 706	Not found	in DM.	Meridian Circle 1899, Mch. 7, 10¼. Cordoba Results, vol. xviii. See also No. 71, p. 3A. of this vol. C.—R. :—No error found in reductions.
263	1033	$53^s{\cdot}76$	$58^s{\cdot}29$	Cordoba to Ristenpart.
264	1080, 1083	...	...	Same star. Cordoba Results, vol. xviii.
,,	1090, 1093	...	...	,, ,, ,, ,, ,, ,,
267	1377	58′ 24″·5	47′ 44″·5	Cordoba Results, vol. xviii. Is same star as C.P.D. −37° 3404. Original record 37° 57′ 44″ changed by 10′.
269	1512, 1513	...	...	Same star. Kapteyn. C.—R.
,,	1588	16′ 13″·0	15′ 53″·0	Cordoba Results, vol. xviii. Z.C. has 16′·2. C.P.D. 15′·8. Thome 16′·1. In C.P.D. 3 obs.
273	1888	...	...	Erroneous repetition of the second observation of No. 1985.
,,	1923	33″·2	13″·2 ?	Cordoba Results, vol. xviii. Kapteyn :— Z. C. — C.P.D. = 0′·35. C.P.D. dec. certainly fairly correct.
274	1989	35′	32′	Cordoba Results, vol. xviii. Kapteyn :—Z.C. — C.P.D. = $+5^s{\cdot}5$. Cordoba :—No error in R.A. possible, original dec. 51° 32′ 22″ which is restored. (But in this position, no star in C.P.D.).
276	2185	$58^s{\cdot}58$—7′ 38″·4	$58^s{\cdot}73$—29′ 38″·7	Cordoba Results, vol. xviii. Kapteyn :—Z.C. — C.P.D. = $-3^s{\cdot}6$. Cordoba :—No error in α, original δ = 59° 29′ 38″·7 is restored. (But in this position no star in C.P.D.).
277	2239	$38^s{\cdot}51$—38′ 51″·1	$53^s{\cdot}07$—44′ 51″·9	Cordoba Results, vol. xviii. Cordoba :—Original δ was 34° 43′ 51″. Now assume 1′ and tally VI. = $9^h\ 27^m\ 53^s{\cdot}07 - 34°\ 44'\ 51''{\cdot}9$ = C.P.D. −34°, 3620.
279	2433	50′	56′	C.—R. :— = C.P.D. −59°, 1419.
,,	2438, 2440	...	...	Same star. Cordoba Results, vol. xviii.
,,	2465	$37^s{\cdot}23$	$33^s{\cdot}64$	Cordoba Results, vol. xviii.
280	2513, 2518	Same star.		Cordoba to Ristenpart.
282	2706	$9^s{\cdot}58$	$8^s{\cdot}24$	Cordoba Results, vol. xviii. Same as No. 2703.
283	2730	$31^s{\cdot}76$	$27^s{\cdot}71$	,, ,, ,, ,,
,,	2797, 2799	...	...	Same star. Cordoba Results, vol. xviii.
284	2850	$6^s{\cdot}48$	$4^s{\cdot}48$	Cordoba Results, vol. xviii. A.N. 2659 :—Same star as 2846.
289	3277	24″·8	14″·8	Cordoba Results, vol. xviii.
291	3479	$54^s{\cdot}14$	$53^s{\cdot}14$	,, ,, ,, ,,
293	3617	55′ 56″·5	56′ 26″·5	,, ,, ,, ,, Kapteyn points out a discordance between the Z.C. and C.P.D. Cordoba replied : originally 10^m and −62° 56′ 26″·5 and no error in R.A. The C.P.D. has a star which agrees excellently in α, but in δ, Z.C. (corrected) − C.P.D. = +1′·2. Ref. in Z.C. to be lowered one line.
,,	3620	59′ 25″·4	57′ 39″·4	Cordoba Results, vol. xviii.
,,	3675	$26^s{\cdot}52$	$26^s{\cdot}02$	,, ,, ,, ,,
295	3792	$3^s{\cdot}87$—25″·1	$2^s{\cdot}07$—5″·1	C.—R. :—Is = 3789. See No. 570, p. 23A. *ante*.
,,	3854, 3858	...	...	Same star. Cordoba Results, vol. xviii.
297	4049	9½ mag.	7½ mag.	Cordoba Results, vol. xviii.
298	4119	$29^s{\cdot}94$	$28^s{\cdot}98$	,, ,, ,, ,,
299	4231	$0^s{\cdot}98$	$0^s{\cdot}84$	,, ,, ,, ,,
,,	,,	30° 34′ 21″·5	31° 34′ 22″·1	

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ERRATA II.—CORDOBA ZONE CATALOGUE. =C.Z. PART I.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
301	9^h 4347	35^s	33^s	Cordoba Results, vol. xviii.
302	4433	$37^s{\cdot}21$	$40^s{\cdot}95$	,, ,, ,, ,,
303	4523	$41''{\cdot}8$	$31''{\cdot}8$	,, ,, ,, ,,
,,	4547	$11'$	$21'$	C.P.D. C.—R.
304	4597	$52^s{\cdot}00$	$51^s{\cdot}00$	Cordoba Results, vol. xviii.
305	10^h 35	$32^s{\cdot}23$	$29^s{\cdot}51$	,, ,, ,, ,, Kapteyn:—Z.C.-C.P.D. $=+3^s{\cdot}2$ and $+0'{\cdot}2$. Being reobserved with Cape T.C.
,,	55	$22'$	$24'$	Cordoba Results, vol. xviii.
306	143	$39'$ (2 obs.)	$[37']$	Kapteyn:—Th. has $38'{\cdot}5$. P.M.? Being reobserved with Cape T.C.
307	164	$22^s{\cdot}40$	$32^s{\cdot}40$	Cordoba Results, vol. xviii. Same as No. 174.
308	294	$3^s{\cdot}42$	$2^s{\cdot}06$	,, ,, ,, ,, ,, ,, ,, 291.
,,	302	$8^s{\cdot}25$	$4^s{\cdot}02$	,, ,, ,, ,,
309	342	$36'$	$34'$	,, ,, ,, ,,
310	464	$14^s{\cdot}60—29''{\cdot}7$	$41^s{\cdot}22—30''{\cdot}0$	Kapteyn. In Zones read V. insteadof VI. C.—R.
311	504	$59'$	$55'$	Cordoba Results, vol. xviii.
312	635, 637	...	...	Same star. Cordoba Results, vol. xviii.
,,	655	9 mag.	$7\frac{1}{2}$ mag.	Cordoba Results, vol. xviii.
,,	666	8^m	7^m	Kapteyn:—Error of reduction in Cord. Zones.
314	773	$30^s{\cdot}28$	$35^s{\cdot}34$	Cordoba Results, vol. xviii. Star same as No. 782.
,,	832	$25'$	$26'$	Kapteyn:—Correct in Cord. Zones.
319	1309	$3'$	$4'$	,, Wash. Zones also give $4'$.
,,	1314	$47^s{\cdot}26$	$47^s{\cdot}05$	Cordoba Results, vol. xviii.
,,	,,	$74^\circ\ 58'\ 10''{\cdot}4$	$75^\circ\ 12'\ 10''{\cdot}8$	,, ,, ,, ,,
320	1412, 1413	...	...	Same star. Cordoba Results, vol. xviii.
,,	1443	$32^s{\cdot}45$	$27^s{\cdot}60$	Cordoba Results, vol. xviii.
324	1725	$43'$	$42'$	,, ,, ,, ,,
,,	1764	...	...	See List of Missing Stars, No. 583, p. 23A. *ante*.
326	1930	$35^s{\cdot}56$	$36^s{\cdot}66$	Cordoba Results, vol. xviii.
,,	1939	$42^s{\cdot}90$	$49^s{\cdot}15$	,, ,, ,, ,,
,,	1986	$3'$	$4'$	C.P.D. and Cordoba Zones.
327	2026	$50^s{\cdot}85—12''{\cdot}5$	$21^s{\cdot}73—12''{\cdot}2$	Cordoba Results, vol. xviii. Same as No. 1987.
,,	2050, 2051	...	...	Same star. Cordoba Results, vol. xviii.
328	2159	Dec. discordant.		Z.C. = 55″. G = 57″. C.P.D. = 78″. P.M.? Being reobserved with Cape T.C. C.—R.:—No error of computation. P.M. probable.
329	2216, 2218	...	...	Same star. Cordoba Results, vol. xviii.
,,	2261	Read $1^s{\cdot}52 = 2249$.		C.—R. See also Nos. 587–8, p. 23A. *ante*.
330	2344	$16'$	$12'$	Confirmed by letter, Cordoba to Ristenpart.
,,	,,	Zona 234	Zona 237	
331	2401, 2407	...	...	Same star. Cordoba Results, vol. xviii.
,,	2435	...	...	Gould, Cordoba Photos p. 206. Position perhaps slightly erroneous.
332	2468	$25''{\cdot}7$	$30''{\cdot}7$?	Gould, Cordoba Photos p. 206. Query Declination 5″ in error.
,,	2511	$42'$	$41'$	Cordoba Results, vol. xviii.
,,	2530	$47^s{\cdot}46$	$49^s{\cdot}46$	,, ,, ,, ,, Same as No. 2534.
334	2705	$6^s{\cdot}42$	$10^s{\cdot}96$	,, ,, ,, ,,
336	2843	$4^s{\cdot}83—27'\ 36''{\cdot}5$	$28^s{\cdot}37—37'\ 36''{\cdot}7$	C.—R. Is C.P.D. -58°, 2637. See also No. 594, p. 24A. *ante*.
338	3067	42^m	41^m	Kapteyn:—Red. Error in Zones. Star identical with 2999.
339	3090	$44'$	$45'$	Kapteyn:—Cordoba Zones.
341	3308	$51'$	$52'$	Cordoba Results, vol. xviii.
,,	3341	$49^s{\cdot}32$	$39^s{\cdot}32$	,, ,, ,, ,, Same as No. 3328.

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ERRATA II.—CORDOBA ZONE CATALOGUE. = C.Z. PART I.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
345	10^h 3674 }	...	...	Same star. Cordoba Results, vol. xviii.
,,	3675 }			
,,	3694	59′	50′	Kapteyn :—Correct in Zones.
346	3754	$40^s.24$—59′	$40^s.81$—57′	,, Dec. of C.P.D. certainly correct. In *g* the Dec. is also erroneous (56′). C.—R. :—No error in δ found, but probably 57′.
347	3871	49′	50′	Cordoba Results, vol. xviii.
348	3981	54^m	53^m	Kapteyn :—Star identical with 3915.
,,	3982	53′	49′	,, *g* agrees with C.P.D. Star observed twice in Cordoba Zone 242 No. 10 is in error, No. 14 correct.
349	4028	$37^s.54$	Bad obs.	$36^s.58$, new obs. Cordoba to Ristenpart.
,,	4077	10′	9′	Cordoba Results, vol. xviii.
350	4105 }	...	...	Same star. Cordoba Results, vol. xviii.
	4107 }			
,,	4128	$9^s.07$	$8^s.94$ }	Cordoba Results, vol. xviii.
,,	,,	28° 30′ 33″.0	29° 30′ 33″.7 }	
,,	4188 }	...	...	Kapteyn :—Assumed to be same star.
	4190 }			
351	4200 }	...	...	Same star. Cordoba Results, vol. xviii.
	4205 }			
,,	4246	58^m	59^m	Kapteyn :—Star identical with 4325.
352	4349	51°	50°	Cordoba Results, vol. xviii.
355	11^h 165	$14^s.87$,	$8^s.70$	C.—R.
,,	$165\frac{1}{2}$	$9\frac{1}{2}^m$ 11^h 2^m $14^s.87$	−40° 14′ 16″.4	C.—R. :—Additional star. Is C.P.D. −40°, 4974.
359	548	$43^s.08$	$46^s.91$	Cordoba Results, vol. xviii.
363	948	$9\frac{1}{2}$ mag.	$7\frac{1}{2}$ mag.	,, ,, ,, ,,
,,	950	23′ 10″.1	[3′ 10″.1]	Not found by Thome who suggests 3′. C.R. xv. 336.
364	999	40′	41′	Cordoba Results, vol. xviii.
,,	1053	47′	27′	Kapteyn :—In Cordoba Zones 37′. Dec. of C.P.D. certainly correct.
366	1232	59″.8	39″.8	Cordoba Results, vol. xviii. Even so Z.C.—C.P.D. = $6^s.6$. C.—R. :—No error found.
367	1252	$53^s.73$	$43^s.73$	Cordoba Results, vol. xviii.
,,	1261	$3^s.23$	$7^s.36$	,, ,, ,, ,,
,,	1294	$28^s.19$	$30^s.56$	Cordoba to Ristenpart.
373	1787	34′	35′	Cordoba Results, vol. xviii.
,,	1849	$37^s.03$	$32^s.03$	,, ,, ,,
374	1915	24^s ±	28^s ±	C.P.D. and C.—R.
376	2047	61° 0′	60° 56′	Cordoba Results, vol. xviii. Kapteyn :—Z.C.—C.P.D. = $-6^s.9$. In C.P.D. 4 obs. Cordoba :—No error in R.A., original Dec. = −60° 56′ (but no star there in C.P.D.)
,,	2102	54′ 3″.0	53′ 53″.0	Gould, Cordoba Photographs.
377	2176	$6^s.52$	$11^s.07$	Cordoba Results, vol. xviii.
378	2296	$7\frac{1}{2}$ mag.	probably $9\frac{1}{2}$ mag.	,, ,, ,, xv. p. 336.
,,	2308	$45^s.31$—7″.2	$59^s.33$—7″.4	,, ,, ,, xviii. Same star as No. 2321.
379	2342	28° 59′	29° 0′	Cordoba Results, vol. xviii. See also No. 83, p. 4A. *ante*, star seen in uncorrected position.
383	2757	20′ 53″.0	32′ 53″.4	Kapteyn :—Error of 12′ also assumed by *g*. C.—R. :—No error found.
384	2870	32′	36′	Cordoba Results, vol. xviii.
387	3160	58′ 59″.3	59′ 39″.3	,, ,, ,, ,,
389	3297	51″.6	11″.6	,, ,, ,, ,,
,,	3351	Is variable.		,, ,, ,, ,, Is W Centauri.
390	3410	45′	46′	Kapteyn:—a agrees with C.P.D.
391	3478	9′	7′	Cordoba Results, vol. xviii.
,,	3526	37″.1	36″.1	,, ,, ,, ,,
392	3610	$41^s.85$—39′ 7″.8	$41^s.48$—56′ 26″.2	C.—R. Is C.P.D.—54°, 4888. See No. 633 p. 25A. *ante*.
394	3837	41″.7	51″.7	Cordoba Results, vol. xviii.

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ERRATA IIA.—CORDOBA ZONE CATALOGUE. = C.Z. PART II.

Page.	Star.	For	Read.	Authority, Remarks, etc.
1	12^h 38	$12^h\ 0^m\ 33^s{\cdot}55$	$11^h\ 59^m\ 53^s{\cdot}78$	Cordoba Results, vol. xviii. Same as No. 4088 of 11^h.
,,	,,	$7''{\cdot}8$	$8''{\cdot}4$	
2	150	$20^s{\cdot}98$	$15^s{\cdot}76$	C.—R. :—Identical with No. 142.
3	207	$3^m\ 20^s{\cdot}48$	$2^m\ 50^s{\cdot}47$	Kapteyn :—Identity with G. 16592 assumed. C.—R.
5	356	$32^s{\cdot}92$	$29^s{\cdot}59$	Cordoba Results, vol. xviii.
6	495	$36'$	$46'$	Kapteyn :—Dec. correct in Cordoba Zones.
7	520	$12'$	$13'$	,, ,, ,, ,, ,, ,,
9	775	$15^s{\cdot}60$	$25^s{\cdot}60$	,, Star identical with No. 787.
10	865	$13^m\ 56^s{\cdot}90$	$14^m\ 1^s{\cdot}54$	C.—R. :—Wrong threads.
12	1059	Mag. 7	Mag. 9	Cordoba Results, vol. xviii.
13	1198	Does not exist.		,, ,, ,, ,,
14	1221	$19^m\ 41^s{\cdot}35—37''{\cdot}9$	$20^m\ 3^s{\cdot}86—38''{\cdot}2$	Kapteyn :—Star identical with No. 1239 if wire V. is taken for VI. C.—R.
15	1368	$33'$	$34'$	Cordoba Results, vol. xviii.
17	1512	$43'$	$41'$	,, ,, ,, ,,
18	1657	$50'$	$30'$	,, ,, ,, ,,
21	1862	$47''{\cdot}0$	$37''{\cdot}0$	,, ,, ,, ,,
22	1961	$19'$	$13'$	Kapteyn:—Correct in Cordoba Zones.
23	2093	Same star.		Cordoba Results, vol. xviii.
,,	2095			
25	2268	$37^m\ 51^s{\cdot}83$	$38^m\ 19^s{\cdot}70$	,, ,, ,, ,, Kapteyn :—Z.C.—C.P.D. = $+0'{\cdot}5$. Dec. of C.P.D. certainly fairly correct. Cordoba :—Dec. $16''{\cdot}8$ and original R.A. $12^h\ 38^m\ 19^s{\cdot}70$. (But there is no star here in the C.P.D.)
,,	,,	$17''{\cdot}4$	$16''{\cdot}8$	
26	2289	$22^s{\cdot}11$	$19^s{\cdot}09$	Cordoba Results, vol. xviii. Same as No. 2286.
,,	2300	$41'$	$45'$	,, ,, ,, ,,
,,	2315	...	...	Kapteyn :—Z.C.—C.P.D. = $+3^s{\cdot}8$. In C.P.D. 4 obs. Cordoba :—No error found. Cape :—*Carte du Ciel* plates 1350 and 2847 by superposition shew no P.M. The position given by these plates is approximately $12^h\ 38^m\ 46^s{\cdot}6$ $-51°\,1'\,27''$ using the 9·3 star which is closely *s.f.*
33	2951	$44^s{\cdot}99$	$47^s{\cdot}58$	Cordoba Results, vol. xviii.
34	3020	R.A. badly observed.		Cordoba to Ristenpart :—A new obs. gives $57^s{\cdot}58$.
,,	3036	$12^s\ 43$	$17^s{\cdot}6$—P.M.?	Cordoba Results, vol. xviii. Kapteyn :— Z.C. —C.P.D. = $-5^s{\cdot}3$. In C.P.D., R.A. certainly correct. Corboba :—No error found. Cape :—*C. du C.* plates 1551, 2811 and 2852 give by estimation $12^h\ 51^m\ 17^s{\cdot}4$. Superposition shews no P.M.
,,	3053	$26^s{\cdot}40$	$26^s{\cdot}74$	Cordoba Results, vol. xviii.
,,	,,	$46°\ 38'\ 38''{\cdot}9$	$45°\ 38'\ 37''{\cdot}3$	
36	3242	Original restored.	$39'\ 12''{\cdot}4$	C.—R. :—No error found. See also No. 662, p. 26A. *ante*.
37	3370	$8^s{\cdot}96$	[14·96]?	Kapteyn :—C.P.D. $14^s{\cdot}0$, *g* (1875) $15^s{\cdot}3$, therefore Z.C. certainly in error. C.—R. :—No error found.
38	3431	$9^s{\cdot}13$	$10^s{\cdot}00$	Cordoba Results, vol. xviii.
,,	3436	$58^m\ 15^s{\cdot}13$	$57^m\ 55^s{\cdot}13$	C.—R. :—See also No. 664, p. 26A. *ante*.
40	13^h 73	$59'$	$58'$	Cordoba Results, vol. xviii.
44	460	$27''{\cdot}3$	$37''{\cdot}3$	,, ,, ,, ,,
,,	467	$57'\ 0''{\cdot}7$	$56'\ 50''{\cdot}7$	Cordoba to Ristenpart.
46	598	$19'$	$18'$	Cordoba Results, vol. xviii.
50	1009	...	...	Ristenpart :—R.A. + 1 tally = 1037. C.—R. :—No error found.
51	1095	$18^m\ 13^s{\cdot}47—50''{\cdot}2$	$17^m\ 55^s{\cdot}72—50''{\cdot}0$	Cordoba Results, vol. xviii. Same as No. 1083.
52	1165	$61°$	$60°$	Kapteyn :—Dec. correct in Cordoba Zones.

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ERRATA IIA.—CORDOBA ZONE CATALOGUE. = C.Z. PART II.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
52	13^h 1222	13′	3′	Kapteyn :—No star on plates in position of Z.C.
55	1446	6 mag.	8 mag.	„ 8 mag. in Cordoba Zones.
,,	1447	$3^s{\cdot}49$	$3^s{\cdot}50$	Cordoba Results, vol. xviii. Same as No. 1448.
,,	,,	58° 20′ 19″·0	59° 0′ 19″·6	
56	1672	12′ 0″·7	11′ 40″·7	C.—R.
58	1829	$24^s{\cdot}87$	$14^s{\cdot}87$	Kapteyn :—Reduction error of 10^s in Cordoba Zones. C.P.D. = $14^s{\cdot}3$. C.—R.
60	2035	$52^s{\cdot}20$	$45^s{\cdot}41$	Kapteyn :—C.P.D. $44^s{\cdot}0$, *g* (1875) $44^s{\cdot}1$, therefore certain error in Z.C.
63	2297	...	...	Kapteyn :—C.P.D. − Z.C. = -2^s, +0′·3. Being reobserved with Cape T.C. C.—R. :—No error, original was $38^m\ 2^s{\cdot}57$, 29° 57′ 27″·2, probably not the C.P.D. star.
65	2520	$42^s{\cdot}66$	$32^s{\cdot}66$	Cordoba Results, vol. xviii.
66	2584	$25^s{\cdot}47$	$10^s{\cdot}24$	„ „ „ „ Same as No. 2566.
67	2730	35° 59′	36° 0′	Kapteyn :—In C.P.D. 4 obs. Wash. Zones give 36° 0′·0. C.—R. :—Original was $5^s{\cdot}48$, −36° 19′ 20″·2 = C.P.D. −36°, 6158.
69	2857, 2859	...	...	Same star. Cordoba Results, vol. xviii.
,,	2862	32′	28′	Cordoba Results, vol. xviii. Same as 2863.
70	3035	$19^s{\cdot}48$	$17^s{\cdot}37$	C.—R. :—Wrong mean.
71	3112	9½ mag.	7½ mag.	„
72	3173	$41^s{\cdot}01$	$38^s{\cdot}22$	Cordoba Results, vol. xviii.
,,	3204	$13^s\ 50$	$16^s{\cdot}84$	„ „ „ „
77	3654	$17^s{\cdot}50$	[$13^s{\cdot}5$]	Star identical with No. 3646; but Cordoba remarks No. 3654 "does not exist."
79	14^h 87, 89	...	...	Same star, Cordoba Results, vol. xviii. {See No. 250, p. 11A. *ante.*
80	247	34′ 5″·4	[33′ 55″·4]	See No. 701, p. 28A. *ante.* Ristenpart:—Perhaps dec. −25′ and = C.P.D. −63°, 3165. C.—R. :—Original was $4^m\ 46^s{\cdot}36$, 32′ 15″·9; assumption improbable.
81	255	33′ 35″·5	43′ 35″·7	Cordoba Results, vol. xviii.
,,	294	9½ mag.	10 mag.	A.N. 3539. {See No. 251, p. 11A. of this volume. But
,,	,,	$32^s{\cdot}51$	$38^s{\cdot}5$—P.M.?	Cordoba Results, vol. xviii. { C.—R. :—No error found!
82	370	$41^s{\cdot}64$—38°	$41^s{\cdot}60$—37°	„ „ „ „
,,	395	31′	32′	Kapteyn :—Correct in Zones. C.—R.
85	690	49′	48′	C.—R. :—Is thus = 689. [Thus the identity with the star seen in the uncorrected position (see No. 707, p. 28A. *ante*) is rejected. Still, a doubt remains].
87	877	$41^s{\cdot}89$—23′	$38^s{\cdot}86$—24′	See A.N. 3539, but now C.—R. :— = C.P.D. −49°, 6916.
,,	896—7	Lower "red"	one line.	This is probable, as the latter star is "red" in the original Zones. [DM."
,,	914	56′	49′	A.N. 3539; but Cordoba remarks "not found in
88	967	$16^s{\cdot}68$	$26^s{\cdot}68$	Cordoba Results, vol. xviii. Same as No. 979.
,,	996	$39^s{\cdot}22$	$47^s{\cdot}56$	C.—R.
92	1363	$21^m\ 26^s{\cdot}46$	$22^m\ 11^s{\cdot}21$	Kapteyn :—In Cordoba Zones read III. instead of V.
,,	,,	10″·2	9″·8	C.—R.
,,	1377	$47^s{\cdot}23$	$43^s{\cdot}57$	Cordoba Results, vol. xviii.
93	1454	54′	52′	Kapteyn :—Dec. of C.P.D. certainly correct. (Thome also confirms.) C.—R.
,,	1476	51′?	49′	Cordoba Results, vol. xviii.
,,	1505	49′ 4″·4	48′ 55″·4	„ „ „ „
94	1515	$46^s{\cdot}24$	$42^s{\cdot}56$	„ „ „ „
,,	1544	9½ mag.	7½ mag.	„ „ „ „

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ERRATA IIA.—CORDOBA ZONE CATALOGUE. = C.Z. PART II.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
94	14^h 1578	...	...	Ristenpart :—Erroneous repetition of the second obs. of No. 1518.
,,	1580	28′ 56″·5	29′ 6″·5	A.N. 2659.
95	1703	36^s·85	38^s·85	Cordoba Results, vol. xviii.
96	1717	26^m 45^s·63	27^m 17^s·34	Kapteyn :—In Cordoba Zones read V. instead of VI., *g* confirms.
,,	,,	39″·2	39″·7	C.—R.
,,	1808	...	dpl.	Cordoba Results, vol. xviii.
97	1826	9½ mag.	7½ mag.	C.—R.
98	1976	Zona 353	Zona 356	Cordoba Results, vol. xviii.
99	2076	...	n. sq	,, ,, ,, ,,
101	2225	...	...	Kapteyn :—Z.C. − C.P.D. = +0′·4. Dec. of C.P.D. certainly fairly correct. Cordoba :—No error, probably 30″ in microscope.
105	2629	41^m	42^m	Cordoba Results, vol. xviii.
,,	2660	...	...	Ristenpart :—g − Z.C. = −13″·5. C.P.D. confirms g. C.—R. :—No error found.
,,	2697	26′ 20″·5	46′ 20″·8	Cordoba Results, vol. xviii
106	2808	9^s·82	12^s·22	,, ,, ,, ,, Same as No. 2811.
107	2878	47′ 51″·4	51′ 51″·5	,, ,, ,, ,,
,,	2903	33^s·76—56′ 19″·2	34^s·47—46′ 19″·0	C.—R. Is thus C.P.D. −70°, 1866.
108	2940	13^s·59—25′ 28″·3	14^s·03—14′ 28″·0	,, ,, ,, −71°, 1685.
109	3092	12′ 40″·8	13′ ...	Cordoba Results, vol. xviii.
110	3126(1)	15^s·52	15^s·72	,, ,, ,, ,,
,,	3126(1)	25° 10′ 45″·6	24° 10′ 45″·0	
,,	3126(2)	46″·2	45″·4	,, ,, ,, ,,
112	3345	27′	28′	,, ,, ,, ,,
,,	3367	56^s·24	51^s·75	,, ,, ,, ,,
,,	3381	5^s·47	0^s·81	,, ,, ,, ,,
115	3709	Not found	in DM.	,, ,, ,, ,, No error found in Z.C.
117	3807	29^s·67	24^s·67	,, ,, ,, ,, Same as No. 3801.
121	15^h 322	...	...	Same star. Cordoba Results, vol. xviii.
	323			
125	634	11^s·38	8^s·52	Cordoba Results, vol. xviii.
126	790	35^s·04	25^s·04	,, ,, ,, ,,
129	1095	24″·4	14″·4	,, ,, ,, ,,
,,	1104	17ˢ·72	18^s·96	Cordoba to Ristenpart.
135	1685	30′	29′	Kapteyn. Correction confirmed by Cordoba. (Ristenpart.)
138	1944	20′ 9″·2	21′ 4″·2	Cordoba Results, vol. xviii.
141	2202	Not found	in DM. Planet?	,, ,, ,, ,, No error found. See No. 262, p. 11A. *ante.*
142	2283	33^m 5^s·64	32^m 5^s·66	Kapteyn. C.—R.
,,	,,	No. 91	No. 92	
,,	2298	16^s·87	16^s·95	Cordoba Results, vol. xviii.
,,	2328	No. 92	No. 91	
143	2385	39′	38′	Kapteyn :—Dec. of C.P.D. certainly correct. Same error in G. C.—R.
146	2668	8′	6′	Kapteyn :—Dec. of C.P.D. confirmed by *g*. C.—R.
152	3164	?	Variable.	Cordoba Results, vol. xviii.
,,	3225	56^s·46—24″·8	32^s·31—24″·4	,, ,, ,, ,,
153	3304	59″·3	49″·3	Cordoba to Ristenpart.
155	3443	1^s·92	20^s·10	Cordoba Results, vol. xviii. Original restored, no error found. See also No. 264, p. 12A. *ante.*
156	3540	36°	26°	Cordoba Results, vol. xviii.
157	3678	5′·	6′	Thome confirms C.P.D. (Z.C. 5′·85, C.P.D. 6′·9, Thome 6′·5). C.—R.
160	3905	?	var.	Cordoba Results, vol. xviii.
,,	3911	46^s·99	...	Kapteyn :—C.P.D. 44^s·4, W. (1875) 44^s·1, therefore certainly error in Z.C. C.—R. :—No error found.

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ERRATA IIA.—CORDOBA ZONE CATALOGUE. = C.Z. PART II.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
162	15^h 4094	$31^s.80$	$31^s.83$	Cordoba Results, vol. xviii.
,,	,,	$44^\circ\ 56'\ 14''.2$	$43^\circ\ 56'\ 13''.5$	
,,	4106	$30''.1$	$20''.1$	,, ,, ,, ,,
165	16^h 145	...	...	Dec. should be increased 10″? Gould, Cord. Photos.
,,	154	$53^s.42$	$39^s.15$	Kapteyn :—In Cord. Zones read VI. instead of V. C.—R. :—No! 3 obs. in Cor. DM. agree with Z.C., red star.
166	184	2^m	3^m	Cordoba Results, vol. xviii. Same as No. 248.
,,	253	$20^s.15$	$16^s.73$	See Cordoba Photos. p. 439. C.—R.
167	326	$18^s.18$	$14^s.08$	Cordoba Results, vol. xviii.
,,	336	$45'\ 3''.7$	$44'\ 53''.7$	,, ,, ,, ,,
168	373	$4^m\ 59^s.45$	$5^m\ 4^s.71$	,, ,, ,, ,, Same as No. 380.
169	533	$24^s.72$	$27^s.34$	C.—R.
170	615	$46''.7$	$[26''.7]$	Ristenpart :—g and C.P.D. indicate this.
172	758	$14'$	$13'$	Kapteyn :—*g* agrees with C.P.D.
,,	816	$11^m\ 24^s.65—54''.0$	$10^m\ 48^s.87—54''.4$	,, In Cordoba Zones read V. instead of IV. Marked ? in C.Z. C.—R.
173	907	$16'$	$17'$	Cordoba Results, vol. xviii.
,,	911	See Missing Stars, No. 751, p. 29A.		*ante.* C.—R. :—Tally V. gives $13^m\ 14^s.80$, $-64^\circ\ 44'\ 37''.8$ = C.P.D. -64°, 3476.
176	1131	$54'$	$55'$	Cordoba Results, vol. xviii.
,,	1167	$36^s.88—53''.6$	$13^s.21—53''.2$	,, ,, ,, ,,
,,	1186	$50^s.06—43''.6$	$26^s.42—43''.2$	Kapteyn :—In Zones read VI. instead of V. C.—R.
177	1196	$33'$	$53'$	Cordoba Results, vol. xviii. See also No. 146, p. 7A. of this vol.
,,	1197	$35''.5$	$29''.5$	Gould, Cordoba Photos. p. 452.
,,	1256	$49^s.24, 66^\circ\ 29'\ 13''.0$	$49^s.32—67^\circ\ 2'\ 7''.8$	C.—R. :—Same as No. 1255.
179	1449	$2^s.99$	$4^s.98$	Cordoba to Ristenpart.
,,	1462	$7\frac{1}{2}$ mag.	$9\frac{1}{2}$ mag.	Cordoba Results, vol. xviii.
181	1617	$45^s.11—48'$	$45^s.23—52'$	Kapteyn :—*g* confirms the C.P.D. C.—R.
,,	1647	$7^s.79$	$12^s.83$	Ristenpart :—Perhaps = 1654. See No. 756, p. 29A. C.—R. [Decs. differ by 8″.]
182	1751	$28''.8$	$48''.8$	Cordoba Results, vol. xviii. C.—R. :—No [other] error found. [The correction given increases the ... divergences from the C.P.D. Is it possible that 1751 requires $+1^m$ making it = 1824?]
184	1873	$13^s.45$	$16^s.75$	Cordoba Results, vol. xviii. Same as No. 1880.
,,	1896	$27^s.24$	$38^s.52$	Kapteyn :—C.P.D. gives $39^s.0$, *g* (1875) 38^s (2 obs. therefore Z.C. certainly in error). C.—R.
,,	1927	$26'$	$36'$	C.—R. :—Reject identification under No. 272, p. 12A. *ante.*
189	2337	$32'$	$33'$	C.—R. See No. 761, p. 30A. *ante.*
,,	2382	...	...	See No. 762, p. 30A. Ristenpart :—Perhaps $+61^s$ = 2455.
191	2492	$39^s.52$	$24^s.41$	Cordoba Results, vol. xviii.
,,	,,	$56'\ 51''.8$	$55'\ 51''.9$	
194	2773	$41^s.01$	$40^s.56$	Cordoba to Ristenpart.
,,	2813	7 mag.	9 mag.	Cordoba Results, vol. xviii.
196	3002	$51^s.34$	$52^s.34$	,, ,, ,, ,, Same as No. 3005.
197	3097	Not found in DM. nor Merid. Zones.		,, ,, ,, ,, No error found in Z.C. See No. 154, Missing Stars.
,,	3138	72°	73°	Cordoba Results, vol. xviii.
198	3213	$26'$	$46'$	,, ,, ,, ,,
199	3280	$19^s.26$	$16^s.07$	,, ,, ,, ,, In Cordoba Errata for No. of Star 3289 read 3280.
,,	3330	Not found in DM.		Cordoba Results, vol. xviii. [Is in C.Z., G., S., and C.P.D.]
,,	3368	$38'$	$39'$	Cordoba Results, vol. xviii.
200	3456(1)	33^s	11^s	,, ,, ,, ,, Same as No. 3422.
,,	3456(2)	$33^s.28—14''.6$	$51^s.72—24''.6$	,, ,, ,, ,,

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ERRATA IIA.—CORDOBA ZONE CATALOGUE. = C.Z. PART II.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
201	16^h 3534	...	...	Kapteyn :—Z.C.—C.P.D. = +0′·4. Dec. of C.P.D. certainly fairly correct.
202	3590	$22^s·37$	$18^s·30$	Cordoba Results, vol. xviii. Same as No. 3583.
,,	3602 } 3606 }	...	...	Same star. Cordoba Zones, vol. xviii.
,,	3643	$50^m\ 51^s·49$	$51^m\ 1^s·49$	Cordoba Results, vol. xviii.
203	3663	$59^s·48$	$59^s·24$	Cordoba to Ristenpart.
,,	3676	$9^s·84$	$9^s·67$	,, ,, ,,
,,	3717	Not found nor Merid.	in DM. Zones.	Cordoba Results, vol. xviii. Kapteyn remarks Z.C. —C.P.D. = $-7^s·3$. O. Stone agrees with C.P.D. See A.N. 3539. C.—R. :—No error found, hence restore original, $51^m\ 58^s·10$, $-24°\ 54′\ 15″·6$.
,,	3735	$12^s·97$	$16^s·97$	Cordoba Results, vol. xviii.
204	3803(2)	...	No. $3803\frac{1}{2}$—n sq.	,, ,, ,, ,,
210	17^h 7	$5^s·21$	$5^s·28$ }	Cordoba Results, vol. xviii. Even so, neither in
,,	,,	$59′\ 55″·5$	$49′\ 55″·4$ }	Cor. DM. or C.P.D. C.—R. :—No error found, original restored. R. :—Now $\alpha + 1^m$ = Cor. DM. $-34°$ No. 11518.
,,	58	$0^m\ 45^s·74$	$1^m\ 14^s·59$	Cordoba Results, vol. xviii.
211	$100\frac{1}{2}$	$9\frac{1}{2}^m\ 17^h\ 1^m\ 21^s·43$	$-75°\ 58′\ 40″·4$	C.—R. Is C.P.D. −75°, 1365.
,,	107	...	...	Kapteyn :—Z.C.—C.P.D. = $+5^s·8$ and +0′·6 ; *g* agrees with C.P.D.
212	196	$52^s·33$	$52^s·41$ }	Kapteyn. Cordoba remarks "Not found in DM."
,,	,,	$56°\ 49′\ 7″·5$	$55°\ 49′\ 6″·6$ }	C.—R.
213	303	18′	12′	A.N. 3539, but still no star in C.P.D. Cordoba remarks "does not exist."
214	391	54′	55′	Cordoba Results, vol. xviii. Dec. was originally 55′, not a C.P.D. star. Kap eyn :—Z.C.—C.P.D. = $+4^s·5$, R.A. of C.P.D. certainly fairly correct. C.—R.
,,	418	$21^s·46$—16″·4	$20^s·70$—26″·4	C.—R. Same as No. 415.
215	508	$44^s·76$	$50^s·90$	Kapteyn :—Z.C.—C.P.D. = $-8^s·4$, *g* 1875 gives $-7^s·0$, therefore the Z.C. must be in error. C.—R. :—No error found in δ.
217	730	...	...	Kapteyn :—Z.C.—C.P.D. = $-3^s·25$ +0′·45. Being reobserved with Cape T.C. C.—R. :—No P.M., original dec. = $-59°\ 48′\ 10″·1$.
221	1080	9′	8′	Cordoba Results, vol. xviii. Kapteyn : — Same error in G.
,,	1084	$7\frac{1}{2}$ mag.	$9\frac{1}{2}$ mag.	Cordoba Results, vol. xviii.
,,	1088	48′	47′	,, ,, ,, ,,
,,	1142	$50^s·42$	$51^s·42$	,, ,, ,, ,,
222	1204	$46^s·92$	$46^s·89$ }	
,,	,,	$61°\ 7′\ 14″·6$	$60°\ 47′\ 14″·2$ }	,, ,, ,, ,,
223	1273	$46^s·77$	$36^s·77$	,, ,, ,, ,,
,,	1322	$7\frac{1}{2}$ mag.	$9\frac{1}{2}$ mag.	,, ,, ,, ,,
,,	1345	$57^s·46$	$57^s·26$	,, ,, ,, ,,
225	1494	Not obs. for DM.,	not seen on revision.	C.—R. See also No. 793, p. 31A. *ante*.
227	1680	$30^s·13$	$24^s·53$	Kapteyn :—Z.C.—C.P.D. = $+5^s·1$, and *g* 1875 gives $24^s·48$. C.—R.
,,	1704	$53^s·28$	$53^s·08$	Cordoba Results, vol. xviii.
229	1928	34″·3	24″·3	,, ,, ,, ,,
231	2105	$58^s·14$	$58^s·12$ }	
,,	,,	$38°\ 17′\ 21″·9$	$37°\ 17′\ 21″·2$ }	,, ,, ,, ,,
,,	2131	9″·8	19″·8	,, ,, ,, ,,
232	2214	57′	58′	Kapteyn :—*g* in good agreement with C.P.D. C.—R.
236	2549 }	Same	star.	Cordoba Results, vol. xviii.
,,	2550 }			
237	2644	$48^s·70$	$47^s·70$	Cordoba to Ristenpart.

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ERRATA IIA.—CORDOBA ZONE CATALOGUE. = C.Z. PART II.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
239	17^h 2930	45″·9	[25″·9]	Kapteyn :—C.P.D. shows differences of about 20″ with these two stars.
241	3103	0′ 54″·0	[1′ 14″·0]	Cordoba Results, vol. xviii. Cordoba :—Nothing found, probably errors of 20″ in micrometer.
242	3204	$17^s·78$	$17^s·51$	Cordoba to Ristenpart.
243	3321	27″	25″	Kapteyn :—Correct in Cordoba Zones. C.—R.
246	3633	4″·0	14″·0	Cordoba to Ristenpart.
250	3997	$45^s·78$	$43^s·37$	,, ,, ,,
252	18^h 60	20′ 5″·3	19′ 55″·3	,, ,, ,,
254	218	$11^s·86$	$1^s·86$	Cordoba Results, vol. xviii. Same as No. 207.
257	530	$49^s·14$	$51^s·18$	,, ,, ,, ,, ,, ,, ,, 533.
259	696	$25^s·49$—7″·7	$42^s·67$—7″·8	,, ,, ,, ,,
,,	729	42′	41′	Kapteyn :—Dec. of C.P.D. certainly correct. C.—R.
262	1033	$20^s·39$	$17^s·56$	Cordoba Results, vol. xviii.
263	1178	5′	6′	,, ,, ,, ,,
264	1228	$43^s·48$	$42^s·62$	,, ,, ,, ,,
266	1440	mag. 7	mag. 9	,, ,, ,, ,,
268	1743(1)	$11^s·73$	$25^s·65$	,, ,, ,, ,,
,,	1743(2)	$11^s·84$—8″·0	$25^s·68$—7″·8	,, ,, ,, ,,
270	1940	Original = 32^m	$54^s·70$—50′ 36″·7	C.—R. Is thus C.P.D. −59°, 7345.
271	2064	20′	21′	Kapteyn :—Dec. of C.P.D. certainly correct. Thome has 21′·0, but no reference to Z.C.
272	2088	$13^s·26$	$19^s·79$	Cordoba Results, vol. xviii. Same as No. 2095.
,,	2120	22′	23′	Kapteyn :—a agrees with C.P.D.
274	2382	42′	38′	Cordoba Results, vol. xviii.
277	2699	23′	24′	Kapteyn :—Dec. of C.P.D. certainly correct.
278	2799	53′	54′	,, ,, ,, ,, ,, ,, Thome gives 54″·5.
,,	2830	28″·1	[48″·1]	Cordoba Results, vol. xviii. Cordoba remarks :—probably an error of 20″. See C.P.D.
281	3122	$6^s·01$	$22^s·25$	Cordoba Results, vol. xviii.
283	19^h 97	47′ 37″·6	58′ 7″·6	,, ,, ,, xvii. p. 541., but in vol. xviii. "Not found in DM." See No. 183, p. 8A. *ante.*
,,	179	34″·9	44″·9	A.N. 2659. Error in errata of Cordoba Results, vol. xviii. For 44″·9, read 34″·9.
284	194(2)	No. 45	No. 51	Cordoba Results, vol. xviii.
,,	,, (3)	,, 51	,, 45	
286	416	37′	36′	,, ,, ,, ,,
289	765	mag. $9\frac{1}{2}$	mag. $7\frac{1}{2}$	,, ,, ,, ,,
291	968	,, $7\frac{1}{2}$	,, $9\frac{1}{2}$	,, ,, ,, ,,
291	1033	32″·9	12″·9	,, ,, ,, ,,
,,	1038	2′	3′	Kapteyn :—*g* agrees with C.P.D.
295	1399	$42^s·33$	$39^s·06$	Cordoba Results, vol. xviii.
296	1476	18′	37′	,, ,, ,, ,, Vesta.
297	1582	$7^s·68$	$21^s·24$	,, ,, ,, ,,
,,	1589	...	...	Same star. Cordoba Results, vol. xviii.
,,	1592			
,,	1629	32″·8	52″·8	,, ,, ,, ,,
298	1665	$20^s·62$	$21^s·04$	Cordoba to Ristenpart.
304	2294	...	...	Same star. Cordoba Results, vol. xviii.
,,	2296			
305	2391	$5^s·94$	$8^s·15$	,, ,, ,, ,,
307	20^h 97	29″·6	39″·6	,, ,, ,, ,,
,,	164	$46^s·98$	$43^s·85$	,, ,, ,, ,,
309	284	$44^s·00$	$40^s·00$	,, ,, ,, ,,
313	766	24′ 53″·5	44′ 53″·8	,, ,, ,, ,,
314	862	26^m $8^s·91$	25^m $58^s·91$	,, ,, ,, ,,
315	966	$10^s·14$	$23^s·52$	Cordoba Results, vol. xviii. Same as No. 972.
316	$990\frac{1}{2}$	Is 9^m, 20^h 30^m $2^s·89$	−72° 9′ 32″·2	C.—R :—Additional Star = C.P.D. −72° No. 2546.

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ERRATA IIA.—CORDOBA ZONE CATALOGUE. =C.Z. PART II..—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
316	20h 992	30m 7s·50—22″·2	33m 30s·67—22″·9	C.—R. —Additional Star =C.P.D. −72° No. 2552.
317	1091	33m 5s·77	32m 46s·82	Cordoba Results, vol. xviii.
,,	,,	75° 44′ 4″·5	79° 43′ 11″·7	
318	1259	38s·39	52s·14	,, ,, ,, ,,
320	1437	...	var. ?	,, ,, ,, ,, See No. 910 on p.
,,	1452	mag. 7	mag. 4	,, ,, ,, ,, [34A. *ante.*
,,	1456(2)	,, 7½	,, 8	,, ,, ,, ,,
,,	1456(3)	,, 8	,, 7½	,, ,, ,, ,,
321	1470	50s·50	46s·09	,, ,, ,, ,, Same as No. 1465.
,,	1533	55″·3	35″·3	,, ,, ,, ,,
322	1562(2)	mag. 9½	mag. 7½	,, ,, ,, ,,
,,	1574	56″·3	46″·3	,, ,, ,, ,,
323	1715	49″·6	39″·6	,, ,, ,, ,,
325	1871	mag. 6½	mag. 8	,, ,, ,, ,,
,,	1885	54°	53°	,, ,, ,, ,,
326	21h 55	20″·3	10″·3	,, ,, ,, ,,
327	164	35s·47	33s·13	,, ,, ,, ,,
328	188	19′	18′	Kapteyn :—Dec. of C.P.D. certainly correct. Thome =18″·3.
,,	215	39° 16′ 39″·6	38° 56′ 59″·3	Cordoba Results, vol. xviii. Same as No. 214.
332	603	7″·2	17″·2	,, ,, ,, ,,
333	753	5s·74	2s·74	,, ,, ,, ,,
,,	768	24m 29s·54—12″·7	25m 55s·29—11″·8	Kapteyn :—If tally III is taken instead of VI, then star identical with No. 807. C.—R.
335	938	44′	43′	Madras 1869 and C.P.D.
336	1062	31s·65	[26s·65] ?	Kapteyn :—Z.C. — C.P.D. = +4s·7. Cordoba :—No error possible in R.A., p.m.? Cape :—*Carte du Ciel* plate 1911 gives 21h 34m 26s and 6 equatorial comparison with 3 stars, gave 21h 34m 25s·6 on 1900, March 26.
337	1158	9″·5	9″·3	Cordoba Results, vol. xviii.
339	1346	27″·2	17″·2	,, ,, ,, ,,
341	1487	41° 56′ 48″·5	42° 16′ 49″·1	,, ,, ,, ,, Same as No. 1488.
,,	1520	41s·29	42s·09	,, ,, ,, ,,
342	1630	56s·77	52s·77	,, ,, ,, ,, Same as No. 1628.
344	1774	9s·53	10s·53	,, ,, ,, ,,
,,	1827	54′ 8″·6	53′ 34″·8	,, ,, ,, ,,
346	22h 20(2)	mag. 9½	mag. 7½	,, ,, ,, ,,
349	291	20s·85	18s·25	,, ,, ,, ,, Original restored.
,,	,,	60° 54′ 47″·7	62° 23′ 49″·3	(But still no star in C.P.D.)
,,	342	?	var.	Cordoba Results, vol. xviii. R Pisc. Aust.
,,	359	37″·4	27″·4	Cordoba to Ristenpart.
351	491	48s·23—45″·0	54s·03—55″·0	Cordoba Results, vol. xviii.
,,	524	...	...	Kapteyn :—Z.C. − C.P.D. =+6s·7 and −0′·25. Being reobserved with Cape T.C.
352	576	7s·38	6s·38	Cordoba Results, vol. xviii.
353	759	23°	28°	,, ,, ,, ,,
354	789	49′	45′	Kapteyn :—*g* agrees with C.P.D.
357	975	Zone 476	477	
,,	1062	mag. 7½	mag. 9½	Cordoba Results, vol. xviii.
360	1407	36s·67	34s·35	Cordoba to Ristenpart.
361	1452	Zone 476	470	Ristenpart.
,,	1460(2)	mag. 9	mag. 7	Cordoba Results, vol. xviii.
,,	1481	16′	14′	Kapteyn :—Dec. of C.P.D. certainly correct. Th. has 14′. C.—R.
362	1668	40s·45	38s·31	Cordoba to Ristenpart.
363	1747	34′	35′	Cordoba Results, vol. xviii.
364	23h 40	52° 7′ 32″·9	51° 47′ 32″·8	,, ,, ,, ,,
,,	51	57s·66	58s·66	,, ,, ,, ,,
366	242	8m 55s·39	9m 13s·95	,, ,, ,, ,,
369	556	22s·36	18s·01	,, ,, ,, ,,

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ERRATA IIA.—CORDOBA ZONE CATALOGUE. =C.Z. PART II.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
370	568	58′ 7″·8	57′ 57″·1	Cordoba Results, vol. xviii.
372	760	$13^s·79$	12^s	,, ,, ,, ,,
,,	841	$57^s·94$—6″·0	$22^s·76$—4″·9	Kapteyn:—In Cordoba Zones read II. instead of IV.
374	1026	24′	23′	Cordoba Results, vol. xviii. C.—R.
377	1296	mag. 8	mag. $8\frac{1}{2}$	Kapteyn:—Dec. correct in Cordoba Zones, also mag. there $8\frac{1}{2}$. C.—R.
,,	,,	70°	76°	
378	1351	49^m	50^m	Ristenpart. See also No. 217, p. 10A.
,,	,,	32°—50″·6	30°—49″·6	C.—R.:—No!; 49^m is correct.
379	1532	55^m $55^s·54$—39″·6	56^m $18^s·08$—39″·8	Kapteyn:—Star identical with No. 1539. In Cordoba Zones read II. instead of III. C.—R.

Zone 476. All the stars of this zone require a correction of $-0^s·60$. (C.—R.)
The following stars thus require $-0^s·60$:—

22^h Nos. 757_2, 784_2, 791_2, 812_2, 908, 961, $993_{1\text{-}2}$, 1000, 1050, 1057, 1155, 1203, 1209, 1233_2, 1249, 1285, 1319, 1373, 1388, 1428, 1468, 1471, 1490, 1495, 1580, 1583, 1629, 1647, 1696, 1706_2, 1758.

23^h Nos. 38, 72, 94, 138, 156, 191, 193, 234, 279_2, 314_2, 317, 318, 369, 370, 375_2, 438, 443, 460, 469, 484, 511_2, 525_2, 583, $603_{1\text{-}2}$, 630, 661_2, 708, 711, 734, 818, 836, 879, 887, 984_2, 1019_2, 1088_2, 1171, 1257, 1298.

Z.C. stars missing in the C.P.D. Nos. 21, 156, 169, 265, 406, 573 and 932, (pp. 1A.—35A. part I. of this volume) not found on revision at the Cape:—At Dr Ristenpart's request the original records at Cordoba were consulted by Dr Thome and no errors were found.

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ERRATA III.—ARGENTINE GENERAL CATALOGUE = G. AND *G* FOR THE CLUSTER CATALOGUES.

The numerous cases in which the Lacaille-numbers are erroneously identified are not mentioned. Many other Lacaille-numbers should be bracketed on account of errors.

Page.	Star.	For	Read.	Authority, Remarks, etc.
4	147(2)	$31^s.89$	$31^s.99$	Cordoba Results, vol. xviii.
5	168	...	...	Kapteyn :—G − C.P.D. = +0′.4. Both in G. and C.P.D. 3 obs. P.M. seems probable. Will be reobserved with Cape T.C.
7	280	$7^s.74 - 3^s\,026$	$7^s.77 - 3^s.031$	Cordoba Results, vol. xviii.
,,	,,	$25°\,57'\,31''.1$	$24°\,57'\,30''.5$	
9	383	...	...	Lalande 626.
10	418	B 53	T 113	Ristenpart.
12	496	+20″.902	+19″.902	Cordoba Results, vol. xviii.
,,	544	+20″.872	+19″.872	,, ,, ,, ,,
21	923	mag. $8\frac{1}{2}$	mag. $9\frac{3}{4}$	,, ,, ,, ,,
,,	934	...	...	Kapteyn :—This is Dreyer G.C. No. 346 The positions for 1875 are :

	Epoch.		
Brisbane	1824	$0^h\,54^m\,34^s.9$	$-72°\,51'.7$
h	1835	$50^s.5$	$51'.1$
G	1878	$43^s.4$	$51'.1$
C.P.D.	1886	$50^s.0$	$51'.0$

Discrepancies are probably wholly attributable to uncertainty of pointing.

,,	956	$-0^s.102$	$-0^s.012$	C.—R.
26	1234	53′	52′	Kapteyn :—1′ error of reduction from equinox 1879 to 1875.
27	1276	mag. 6·6	mag. 8	Cordoba Results, vol. xviii.
40	1898	54′	55′	Kapteyn :—1′ error of reduction from equinox 1880 to 1875.
43	2046	$55^s.03$	$55^s.26$	Cordoba Results, vol. xviii.
,,	2047	1′	0′	Kapteyn :—1′ error of reduction from equinox 1880 to 1875.
44	2107	$2^s.934$	$2^s.634$	
49	2337	$9\frac{1}{2}^m$	$8\frac{1}{2}^m$	C.—R. :—"dpl. I. center."
69	3399	7^m	$7{\cdot}0^m$	Cordoba Results, vol. xviii.
70	3433	B 489	...	Ristenpart.
75	3736	17′	16′	Kapteyn :—Dec. of C.P.D. certainly correct. Same error in Z.C., but in original zones correct.
90	4491	$50^s.95$	$50^s.87$	Cordoba Results, vol. xviii.
,,	,,	$1^s.658$	$1^s.675$	
,,	,,	56′	36′	
93	4653	$46^s.91$	$46^s.66$	,, ,, ,, ,,
94	4714	mag. 10	mag. 9—9, dpl. I.	,, ,, ,, ,,
,,	4725	$26^s.35$	$26^s.95$	,, ,, ,, ,,
98	4923	$29^s.74$	$29^s.85$	Corrigenda before title page.
100	5039	$23^s.48$	$23^s.23$	Cordoba Results, vol. xviii.
,,	5042	$26^s.90$	$27^s.15$	,, ,, ,, ,,
106	5355	mag. $8\frac{1}{4}$	mag. $8\frac{3}{4}$	,, ,, ,, ,,
108	5427	27′	28′	Kapteyn :—Dec. of C.P.D. certainly correct. Dec. also in error in Z.C
112	5658	26′	25′	Cordoba Results, vol. xiii. p. 445.
113	5701	$37^s.56$	$37^s.22$	[19A. *ante.*
123	6247	Not found in DM.		Cordoba Results, vol. xviii. See also No. 458, p.
127	6447(2)	$55^s.75$	$55^s.25$	,, ,, ,, ,,
129	$6560\frac{1}{2}$	$2^s.100$	$2^s.180$	C.—R.
134	6815	19″.4	20″.7	Corrigenda before title page.

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ERRATA III.—ARGENTINE GENERAL CATALOGUE—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
143	7300	mag. 7	mag. $7\frac{3}{4}$	Cordoba Results, vol. xviii.
145	7381	$47^s.12$	$47^s.37$	,, ,, ,, ,,
146	7453	mag. $8\frac{1}{4}$	mag. $8\frac{3}{4}$	,, ,, ,, ,,
153	7835	20^m .	19^m	Kapteyn:—*g* agree with C.P.D.
160	8206	mag. $6\frac{1}{2}$	mag. $8\frac{1}{2}$	Cordoba Results, vol. xviii.
161	8256	$7^s.24$—$2^s.479$	$7^s.03$—$2^s.586$	,, ,, ,, ,,
,,	,,	24′	20′	
163	8374	Volans.	Puppis.	
,,	,,	$30^s.38$	$18^s.16$	
,,	,,	$-0^s.459$	$+1^s.985$	Cordoba Results, vol. xviii.
,,	,,	$-0^s.017$	$+0^s.001$	
,,	,,	69° +0″.067	39° −0″.285	
164	8445	8′	7′	C.—R.:—Is thus identical with a star referred to under No. 492, p. 20A.
165	8476	$59^s.34$	$59^s.14$	
,,	,,	$1^s.640$	$1^s.870$	Cordoba Results, vol. xviii.
,,	,,	47° 30′ 6″.2	42° 30′ 1″.1	
166	8532	P 261	P 262	Ristenpart. [correct.
167	8553	30′	31′	Kapteyn:—*g* agrees with C.P.D. which is certainly
169	8677	...	$42^s.99$	C.—R.
173	8856	$3^s.24$	$2^s.99$	Cordoba Results, vol. xviii.
182	9285	12^m	11^m	,, ,, ,, ,, Same as No. 9258.
184	9409	45′	46′	Kapteyn:—Dec. of C.P.D. certainly correct. Z.C. agrees with G. C.—R.
188	9584	50′	51′	Cordoba Results, vol. xviii.
190	9723	...	O.A. 7022	,, ,, ,, ,,
196	10014	$37^m\ 59^s.53$	$38^m\ 1^s.53$	,, ,, ,, ,,
197	10046	48′	47′	C.—R.:—Thus letter G in C.P.D. should be raised one line.
199	10134	$19^s.83$	$18^s.67$	
,,	,,	$2^s.387$	$2^s.621$	Cordoba Results, vol. xviii.
,,	,,	29°—0″.312	20°—0″.342	
202	10260	33′	32′	,, ,, ,, ,,
,,	10294	$11^s.31$	$12^s.31$	,, ,, ,, ,,
205	10434	Does not exist.		,, ,, ,, ,,
207	10555	28′ 43″.2	25′ 46″.6	C.—R.:—Thus = G 10556, and delete G in C.P.D. − 60°, 952.
215	10964	8^m	7^m	Cordoba Results, vol. xviii. Same as No. 10931.
217	11039	$33^s.54$—44″.7	$33^s.86$—48″.2	,, ,, ,, ,,
,,	11072	53′	54′	,, ,, ,, ,,
219	11145	24′	25′	,, ,, ,, ,,
,,	11146	24′	22′	C.—R.:—Thus = C.P.D. − 25° No. 3524, which should receive a G.
220	11218	0″.192	0″.292	Cordoba Results, vol. xviii.
221	11267	$25^s.14$	$25^s.27$	Corrigenda before the title page.
,,	11270	$27^s.21$	$27^s.34$	
237	12087	$18^s.61$	$18^s.27$	Cordoba Results, vol. xviii.
239	12183	mag. 8	mag. $9\frac{1}{4}$	,, ,, ,, ,,
241	12291(1)	$28^s.05$	$27^s.72$	,, ,, ,, ,,
,,	12291(2)	$28^s.00$	$27^s.85$	,, ,, ,, ,,
243	12388	11″.3	13″.6	,, ,, ,, ,,
245	12473	$54^s.78$	$54^s.53$	,, ,, ,, ,,
246	12577	9^m	8^m	Kapteyn:—Thome confirms C.P.D place.
249	12702	Pyxis.	Vela.	Corrigenda before the title page.
251	12797	$1^s.395$	$2^s.395$	
,,	12807	$56^s.30$	$56^s.23$	
,,	,,	$1^s.278$	$1^s.293$	Cordoba Results, vol. xviii.
,,	,,	15′	5′	
253	12899	32″.3	26″.3	,, ,, ,, ,,
254	12969	mag. 7	mag. 7·0	,, ,, ,, ,,
256	13063	23″.9	13″.9	,, ,, ,, ,,

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ERRATA III.—ARGENTINE GENERAL CATALOGUE—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
261	13327	mag. $7\frac{1}{2}$	mag. $9\frac{1}{2}$	Kapteyn:—Mag. in error? The original estimates are 10, $9\frac{3}{4}$, 9. In Z.C. 9. In *g*. 9·5. C.—R.
265	13536	$2''\cdot9$	$11''\cdot2$	Cordoba Results, vol. xviii.
,,	13548	mag. $7\frac{1}{2}$	mag. [9]	Kapteyn:—No estimate of mag. in the original observation. In Z.C. 9 mag. C.DM. = 9·2 mag.
267	13627	$8^s\cdot68$	$8^s\cdot35$	Cordoba Results, vol. xviii.
276	14069	mag. $7\frac{1}{2}$	mag. $9\frac{1}{2}$	Kapteyn:—In original observations, 1876, Mar. 7, $7\frac{1}{2}$, 1876, Mar. 13, $9\frac{1}{2}$. Z.C. $9\frac{1}{2}$. g. 9·2.
277	14144 14145	Mags. interchanged, 1st star is J.		C.—R.
284	14464	$19^s\cdot43$	$[15^s\cdot8]$	Kapteyn:—C.P.D. certainly fairly correct. In face of the correction to the dec., Kapteyn's identification must be rejected.
,,	,,	$2^s\cdot593$	$2^s\cdot588$	Cordoba Results, vol. xviii.
,,	,,	$9'\ 46''\cdot0$	$29'\ 46''\cdot3$	,, ,, ,, ,, = C.P.D. $-43°$, 4810.
,,	,,	G 1289	Anon.	,, ,, ,, ,,
285	14524	$40''\cdot4$	$45''\cdot4$?	Gould, Cordoba Photos, p. 206.
287	14607	$35^m—''\cdot718$	$34^m—''\cdot686$	Cordoba Results, vol. xviii. Same as No. 14584.
,,	14609	...	...	Gould says: needs $+10^{secs}$. Cordoba Photos, p.
288	14627	9 mag., 58° 57′	$7\frac{1}{4}$ mag., 59° 1′	C.—R.:—Same as 14626. [280–1.
,,	14647	mag. $8\frac{1}{4}$	mag. $7\frac{1}{2}$	Cordoba Results, vol. xviii.
289	14697	$2^s\cdot991—2'$	$2^s\cdot989—12'$	,, ,, ,, ,,
292	14842	Is variable.		,, ,, ,, ,, V Hydræ.
296	15061	Ll.	L.	,, ,, ,, ,,
299	15177	$45^s\cdot83—52'$	$45^s\cdot88—53'$	,, ,, ,, ,,
305	15473	$13^s\cdot16$	$12^s\cdot83$	,, ,, ,, ,,
306	15498	$27^s\cdot97$	$26^s\cdot97$	,, ,, ,, ,,
308	15620	46′	45′	Kapteyn:—Stone agrees with C.P.D.
318	16152	...	...	,, G. − C.P.D. = $+8^{secs}$ and $+1'$. Position of C.P.D. fairly correct. P.M.? Being reobserved with Cape T.C. C.—R.:—Broken transits, twice 31′. ♂ *, 11^m.
322	16411	L. 4970	Z.C. 3740	Cordoba Results, vol. xviii.
325	16532	$59^m\ 54^s\cdot83$	$58^m\ 54^s\cdot84$	Cordoba Results, vol. xviii. Same as No. 16498.
,,	,,	$3^s\cdot071$	$3^s\cdot064$	
,,	,,	$0^s\cdot035—0''\cdot009$	$0^s\cdot034—0''\cdot007$	
334	17028	$7''\cdot8$	$5''\cdot3$	,, ,, ,, ,,
340	17392	$21^s\cdot19$	$21^s\cdot49$	C.—R.
,,	17413	$30^s\cdot88$	$31^s\cdot21$	Cordoba Results, vol. xviii.
341	17465	...	...	Gould:—Needs -1^s? Cordoba Photos, p. 420.
343	17575	mag. $9\frac{1}{4}$	$[7\frac{1}{2}]$	Kapteyn:—Probable error in mag. No estimate with original observation, Z.C. = $7\frac{1}{2}$. C.P.D. = 8·0.
,,	17594	B 4252	B 4249	Kapteyn:—The two are probably the same, but B. 4252 is in error.
344	17645	L.	Ll.	Cordoba Results, vol. xviii.
347	17787	$56^s\cdot32$	$54^s\cdot32$	Kapteyn. C.—R.
355	18176	See No. 676, p. 27A. *ante*.		C.—R.:—No error found.
357	18333	39′	38′	Kapteyn:—k and *g* agree with that of C.P.D.
358	18387	$9^s\cdot33—''\cdot717$	$19^s\cdot33—''\cdot712$	Cordoba Results, vol. xviii.
,,	18430	$38'\ 37''\cdot8$	$39'\ 27''\cdot8$	,, ,, ,, ,, Kapteyn remarks: Cordoba Results, vol. xviii. gives $38'\ 27''\cdot8$, but another correction of 1′ is necessary. Cor. DM. has 39′·6. C.—R.
360	18494	Ll. 25116	P 129	Ristenpart.
362	18608	mag. 7·0	mag. 7·6	Cordoba Results, vol. xviii.
,,	18618	,, $7\frac{1}{2}$	,, 7·8	,, ,, ,, ,,
365	18791	$48'\ 41''\cdot7$	$49'\ 14''\cdot8$	,, ,, ,, ,,
366	18800	$36^s\cdot54—83°\ 31'$	$35^s\cdot76—84°\ 10'$	C.—R.:—Same as 18802. See also No. 688, p. 27A. *ante*.
367	18889(1)	$10^s\cdot42$	$10^s\cdot49$	Cordoba Results, vol. xviii.
,,	18889(2)	$10^s\cdot26—7''\cdot0$	$10^s\cdot64—5''\cdot5$	,, ,, ,, ,,

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ERRATA III.—ARGENTINE GENERAL CATALOGUE– *continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
370	19061	$13^s{\cdot}65$	$13^s{\cdot}32$	Cordoba Results, vol. xviii.
372	19185	$16''{\cdot}0$	$17''{\cdot}0$	Corrigenda before title page.
376	19416	Is variable.		Cordoba Results, vol. xviii.
,,	19422	39c.	29o	C.—R.
380	19643	Is variable.		Cordoba Results, vol. xviii.
388	20050	T 6906	...	Ristenpart:—Must be put to 20051. C.—R.:—Is Z.C. 2597.
,,	20063	mag. 9	mag. [7]	Kapteyn:—Probably to be read 7, with the 4 original observations there is not a single estimate of mag. Z.C. gives 7, S. 7, a $7\frac{1}{2}$, l, b, c, Lac. 7, Th. 7·2.
,,	20091	mag. $9\frac{1}{2}$	mag. $7\frac{1}{2}$	Cordoba Results, vol. xviii.
390	20171	St. 8109	St. 8107	,, ,, ,, ,,
391	20227	$53^s{\cdot}51$	$54^s{\cdot}17$	,, ,, ,, ,,
,,	20267	B 5127	...	C.—R.:—Must be put to 20268. [agrees.
392	20309	57′	56′	Kapteyn:—Dec. of C.P.D. certainly correct, and *g*
397	20565	L 6248	T 7067	Ristenpart:—Must be put to 20566.
,,	20595	$44^s{\cdot}94$	$45^s{\cdot}94$	Cordoba Results, vol. xviii.
,,	20603	...	L. 6273	,, ,, ,, ,,
408	21182	31′	30′	Kapteyn:—Dec. of C.P.D. certainly correct, and *g* agrees. [agrees.
409	21264	39′	38′	Kapteyn:—Dec. of C.P.D. certainly correct, and Z.C.
414	21525	46^m	47^m	Star identical with No. $21547\frac{1}{2}$.
,,	,,	$3^s{\cdot}532$	$3^s{\cdot}533$	Cordoba Results, vol. xviii., and A.N. 3227.
,,	,,	$11''{\cdot}046$	$10''{\cdot}972$	
416	21660	$15''{\cdot}0$	$10''{\cdot}0$	,, ,, ,, ,,
425	22201	Nebula, Mag. as a whole.		C.—R.
432	22506	mag. $10\frac{1}{4}$	mag. $9\frac{1}{4}$	,, ,, ,, ,,
438	22805	$15''{\cdot}8$	$5''{\cdot}8$	,, ,, ,, ,,
,,	22834	mag. $10\frac{1}{4}$	mag. $[8\frac{1}{4}]$	Kapteyn:—C.P.D. gives 8·7, Z.C. $8\frac{1}{2}$, 8.
440	22936	$16^s{\cdot}05$	$[17^s{\cdot}05]$	C.Z. has $16^s{\cdot}89$, C.P.D. has $17^s{\cdot}0$.
442	23020	$12^s{\cdot}33$	$12^s{\cdot}03$	Cordoba Results, vol. xviii.
,,	23047	...	Cape 40, 2255	
,,	23050	...	B (5935)	Ristenpart.
446	23260	$41^s{\cdot}55$	$41^s{\cdot}22$	Cordoba Results, vol. xviii.
451′	23544	9′	8′	,, ,, ,, ,,
452	23581	$32''{\cdot}6$	$42''{\cdot}6$	,, ,, ,, ,,
453	23668	$13^s{\cdot}58$	$13^s{\cdot}54$	C.—R.
,,	,,	$4^s{\cdot}263$	$4^s{\cdot}305$	Cordoba Results, vol. xviii.
,,	,,	$42°\ 5'\ 21''{\cdot}4$	$43°\ 5'\ 21''{\cdot}9$	
,,	,,	M. 1594 ?	Anon.	
456	23823	$9\frac{3}{4}^m$	$[8\frac{1}{2}^m]$	Kapteyn:—No estimate in original. C.—R:—Original mags. from 9·5 to 8·5, revision 9·5.
459	23960	mag. $9\frac{1}{2}$	mag. $7\frac{1}{2}$?	Kapteyn:—In G (cluster Cat.) mag. $7\frac{1}{2}$, Z.C. 8.
,,	23970	...	B (6176)	Ristenpart.
465	24285	P 258	...	,,
469	24566	mag. 6·8	mag. 8·1 (group)	Cordoba Results, vol. xviii.
470	24582	1·593	0·593	C.—R.
,,	24583	,,	,,	,,
472	24691	mag. 6·7	mag. $7\frac{3}{4}$	Cordoba Results, vol. xviii.
474	24805	5^m	6^m	Kapteyn:—Star identical with No. 24821 and Lac. 7559. Prec. in $\delta = +0''{\cdot}594$. C.—R.
,,	,,	$27''{\cdot}7$	$27''{\cdot}4$	
476	24935	$5^s{\cdot}130 - 1'$	$5^s{\cdot}136 - 2'$	Cordoba Results, vol. xviii.
482	25267	mag. $7\frac{1}{2}$	mag. $9\frac{1}{2}$	,, ,, ,, ,,
489	25620	$4^s{\cdot}54 - 39''{\cdot}0$	$14^s{\cdot}54 - 49''{\cdot}0$	,, ,, ,, ,, Same as No. 25626.
,,	25638	mag. $7\frac{1}{2}$	mag. $8\frac{1}{2}$?	Kapteyn:—There is no estimate of the mag. with the original obs. In Z.C. 9, in C.P.D. 8·2, in Th. 8·5.
491	25772	mag. $7\frac{1}{2}$	mag. 9 ?	Kapteyn:—There is no estimate of the mag. with the original obs. In Z.C. 9, in W.Z. 9, in C.P.D. 9·1. C.—R.:—DM. mags. $-7\frac{1}{2}$ and $8\frac{1}{2}$, revision $8\frac{1}{2}$.

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ERRATA III.—ARGENTINE GENERAL CATALOGUE—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
497	26079	See No. 26067.		A.N. 3427. C.—R.:—Probably α in error.
,,	26116	$43^s.87$	$44^s.80$	Cordoba Results, vol. xviii.
,,	,,	$3^s.921$	$3^s.889$	
,,	,,	33°	32°	
500	26275	$45''.3$	$36''.5$	,, ,, ,, ,,
502	26384	Is variable.		,, ,, ,, ,,
503	26424	$23''.3$	$14''.+$	C.—R.
506	26643	...	B (6666–7)	Ristenpart.
507	26644	mag. $9\frac{3}{4}$	mag. 8	Cordoba Results, vol. xviii. A.N. 3227 gives 8·1.
516	27247	46^m	47^m	C.—R.
517	27266	Is pr. and N. of 2 stars.		,,
518	27305	Is variable.		Cordoba Results, vol. xviii.
519	27375	$+4^s.022$	$+4^s.023$	
520	27391	L. 6781	B 6781	Ristenpart.
,,	27395	Telescopium.	Sagittarius.	Cordoba Results, vol. xviii.
,,	27395	Same star.		,, ,, ,, ,,
,,	27396			
521	27469	$28^s.98$	$28^s.64$	Error of reduction, correct in annual volume.
524	27643	$38^s.03$	$36^s.31$	Cordoba Results, vol. xviii.
,,	,,	$4^s.344$	$4^s.905$	
,,	,,	$0^s.036$	$0^s.059$	
,,	,,	$48^\circ\ 1'\ 3''.5$	$58^\circ\ 1'\ 15''.2$	
,,	,,	$''.376$	$''.374$	
,,	,,	$''.533$	$''.607$	
,,	27656	$6'$	$5'$	Kapteyn:—Dec. of C.P.D. certainly correct. Is Cape 1860, No. 934 which also gives $5'$.
525	27733	$46''.0$	$46''.9$	Corrigenda before title page.
526	27793	$39^s.51$	$39^s.17$	A.N. 3227.
530	28010	$9^s.61$	$10^s.60$	Cordoba Results, vol. xviii.
,,	,,	$4^s.521$	$4^s.327$	
,,	,,	$0^s.048$	$0^s.040$	
,,	,,	52°	48°	
,,	,,	$''.442—0''.537$	$''.443—0''.513$	
531	28063	$21^m—6^s.375$	$20^m—6^s.385$	Cordoba Results, vol. xviii. Same star as No. 28039
,,	,,	$''.597—0''.753$	$''.525—0''.757$	,, ,, ,, xvii., p. 542.
532	28104	mag. $7\frac{3}{4}$	mag. $9\frac{1}{2}$	,, ,, ,, xviii.
534	28173	,, $8\frac{1}{2}$	,, 8	,, ,, ,, ,,
539	28489	Ll.	L.	,, ,, ,, ,,
549	29010	2^m	3^m	Kapteyn:—Same star as No. 29035.
553	29210	10^m	9^m	,, Proved by S. and *g*.
,,	29235	$12^m\ 16^s.34, 10^s.591$	$13^m\ 16^s.22, 10^s.554$	Cordoba Results, vol. xviii. Same as No. 29257
,,	,,	$24''.8, ''.919, 1''.026$	$24''.6, ''.977, 1''.017$	and Lac. 8672. C.—R.
556	29398	Ll. 21683	Ll. 41683	Cordoba Results, vol. xviii.
564	29814	$53^s.91$	$54^s.52$	,, ,, ,, ,,
569	30093	$53^m—3^s.410$	$54^m—3^s.407$	,, ,, ,, ,,
,,	,,	$''.059$	$''.105$	
571	30195	O. A. 21854	O. A. 21853	,, ,, ,, ,,
574	30372	$37^s.43—7^s.154$	$37^s.40—7^s.162$	,, ,, ,, ,,
,,	,,	$9'$	$10'$	
592	31230	$58''.0$	$59''.0$	Corrigenda before title page.
595	31378	mag. 9	mag. $7\frac{3}{4}$	Cordoba Results, vol. xviii.
598	31538	$55'$	$56'$	,, ,, ,, ,,
607	31997	$3^s.173$	$3^s.170$	,, ,, ,, ,,
,,	,,	$33^\circ\ 27'\ 35''.5$	$32^\circ\ 27'\ 34''.3$	
609	32132	$48^s.54$	$48^s.21$	,, ,, ,, ,, and A.N. 3227.
613	32286	L. 9614	Anon.	,, ,, ,, ,,
,,	32316(2)	$10^s.45—13''.2$	$10^s.77—8''.2$	,, ,, ,, ,,
615	32376	$8^s.36$	$8^s.46$	Corrigenda before title page.
622	17	$27'$	$28'$	Kapteyn:—Stone agrees with C.P.D.
,,	28	...	$20'\ 55''.7$	This is in Gould's Cordoba Photos, No. 234, $9^h\ 59^m\ 11^s.36 — 59^\circ\ 20'.9$ which agrees with C.P.D. Place of G. in error. C.—R.

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ERRATA III. ARGENTINE GENERAL CATALOGUE—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
622	30	$18^s.32$—28′ 57″·8	$18^s.35$—36′ 58″·0	C.—R. Thus C.P.D. −59° No. 1772 receives a *G.* See also No. 576, p. 23A. *ante.*
623	38	30′	31′	Kapteyn :—Correct in the observations of 1881, and 1884, also in Cordoba Photos 31′.
624	9	36′	35′	Cordoba Photographs.
625	12	...	...	Gould suggests +10s. Cordoba Photos, pp. 280–1.
,,	20	$31^s.39$—58° 57′	$31^s.39$—59° 1′	C.—R. Same as No. 19. See also No. 591, p. 24A. *ante.*
,,	33	58° 58′	58° 59′	Gould, Cordoba Photos, p. 280–1 } Same star :—
,,	34	59° 0′	58° 59′	,, ,, ,, 281 } Kapteyn.
626	37	43′	44′	,, ,, ,, ,, No. 649.
,,	63	$37^s.54$—51′	$37^s.56$—58′	C.—R.
629	204	47′	50′	,,
630	215	$46^m\ 3^s.19$	$45^m\ 35^s.75$	,, Same as No. 212.
632	82	$40^s.21$—55′ 45″·4	$40^s.12$—5′ 44″·4 }	,, See No. 605, p. 24A. *ante.*
,,	,,	$2^s.476$	$2^s.496$ }	C.P.D. −58°, 2970 thus gets a *G.*
,,	87	42′	43′	Ristenpart :—Seems probable, but C.—R. :—probably = 88.
635	200	$55^s.93$—57°, 4″·8	$56^s.06$—58°, 6″·0	Kapteyn :—Star identical with Z.C. 358, thus proving error.
,,	,,	$2^s.566$	$2^s.548$	C.—R.
636	25	57″·2	27″·2	Gould, Cordoba Photos, p. 420.
637	15	$17^s.64$	$16^s.64$	,, ,, ,, ,, 452.
638	,,	13′	12′	C.—R. Same as No. 16. See also No. 168, p. 8A. *ante.*
640	21	$40^s.87$—34° 59′	$38^s.87$—35° 0′	C.—R. Same as No. 19. See also No. 171, p. 8A. *ante.*
,,	50	41″·0	31″·0	Gould, Cordoba Photos, p. 481.
641	56	$55^s.12$	$54^s.12$	
,,	93	24′	28′	Kapteyn:—Star identical with No. 92. Certainly no star in position of 93. C.—R.
642	115	Is $47^m\ 38^s.40$,	40″·2.	C.—R. See also No. 175, p. 8A. *ante.*
647	140	$28^s.88$	$38^s.88$	Kapteyn :—Star identical with No. 144.
,,	165	57′	59′	,, ,, ,, ,, 166.
648	180	Ll. 33564	Yar.$_3$ 7872	
,,	203	$51^s.58$—17°	$51^s.54$—18°	,, ,, ,, ,, 202. C.—R.
,,	213	$14^s.83$—18°	$14^s.87$—17°	,, ,, ,, ,, 214. ,,

Contingent errata arising from the above have only been noted in a few cases.

For other probable errata in the Cluster Catalogues, see pp. 23A.—24A., Nos. 586, 593, 596, 597, and 606.

Nos. 21135, 21259, 21369, 22493, 23060, 24012, 26638, 26923 and 29507 :—The references B are to be struck out. (Ristenpart).

Nos. 17594, 19198, 19544, 20282, 20289, 21462, 21908, 21947, 22172, 22718, 23136, 23446, 23594 and 27391 :—References to B should be added. (Ristenpart).

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ERRATA IV.—GILLISS'S SOUTH CIRCUMPOLAR CATALOGUE 1850 = *g*.

This list is only provisional; Dr Ristenpart is now publishing a larger list based on his researches and communications from Washington.

Page.	Star.	For	Read.	Authority, Remarks, etc. (W. = Private Communication from the Washington Observatory).
2	28	15′ 24″·6	11′ 9″·4	Kapteyn:—Dec. requires + 1 wire interval.
,,	63	+2ˢ·943	+1ˢ·780	,,
4	111	42′	22′	W.
5	153	14ᵐ 25ˢ·65	12ᵐ 25ˢ·48	,, Same star as 124.
,,	,,	58″·0	58″·6	,, ,, ,, ,, ,,
,,	162	40′	42′	,, C.P.D. −80°, No. 8 requires a *g*.
,,	185	17ᵐ	16ᵐ	,, Same star as 173.
6	190	...	...	Kapteyn:—First dec. seems to be the right one.
7	244	...	...	,, Probably the lower dec. correct.
,,	249	2ˢ·257	0ˢ·257	,,
9	327	59ˢ·11, 1 obs.	59ˢ·26, 2 obs.	W. 328 is included and is to be struck out.
,,	,,	28″·1	28″·6	,,
10	351	...	...	Kapteyn:—First dec. seems to be the right one.
,,	357	...	...	W. Erroneous repetition of 536.
,,	358	...	...	,, ,, ,, ,, 538.
,,	373	35ˢ·92	43ˢ·92	Kapteyn:—*g* (1875) 37ˢ Z.C. 45ˢ C.P.D. 44ˢ. W.
12	440	15′	14′	W.
14	517	52ᵐ	48ᵐ	,,
15	557	57ᵐ	52	,,
16	593	−1ˢ·329	+1ˢ·339	Kapteyn.
,,	594	2ᵐ 32ˢ·52	3ᵐ 24ˢ·90	W. Same star as 602.
,,	,,	38″·5	34″·1	,, ,, ,, ,, ,,
17	654	Footnote.	...	Kapteyn:—P.M. requires confirmation. } Being re-observed with Cape T.C.
,,	662	,,	...	,, ,, in R.A. probable. }
,,	664	10ᵐ	9ᵐ	,, In position of *g* star missing on plates.
18	700	42′	45′	W.
19	710	1ʰ	4ʰ	,, Same star as 2423.
,,	736	...	...	Kapteyn:—Dec. requires + 1 wire interval (4′15″±).
20	754	...	...	W. Record straight. See No. 354, p. 15A. *ante*.
21	821	...	...	Kapteyn:—Footnote may be deleted.
22	840	1ˢ·731	0ˢ·731	,,
,,	848	33ˢ	43ˢ	,, Same star as 851.
23	894	35ᵐ	36ᵐ	,,
,,	899	74° 38′ 9″·3	74° 28′ 28″·3 }	,, Assumed that the decs. in *g* must have been interchanged in error.
,,	905	74° 28′ 28″·3	74° 38′ 9″·3 }	
24	934	40ᵐ	39ᵐ	Kapteyn.
25	956	...	...	,, The R.A. in C.P.D. is about 11ˢᵉᶜˢ· greater.
,,	971	...	...	,, ,, ,, ,, ,, ,, ,, 9ˢᵉᶜˢ· less.
,,	981	45ᵐ±	47ᵐ·0	,,
,,	983	...	...	Kapteyn:—The 2nd dec. seems to be the right one.
27	1045	24ˢ·50	24ˢ 36 }	W. Same star as 1044.
,,	,,	76° 16′ 8″·4	79° 16′ 7″·9 }	
,,	1053	...	...	W. Corrected to 1ʰ 52ᵐ 4ˢ·45.
				Kapteyn:—C.P.D. in error, to be corrected by +10ˢᵉᶜˢ·
28	1088	...	...	Kapteyn:—The 2nd dec. seems to be the right one.
29	1110	55′ 19″·3	55′ 47″·2	W. to Ristenpart.
30	1149	6ˢ·52	6ˢ·42 }	W. Same star as 1148.
,,	,,	6′ 2″·9	1′ 50″·5 }	
,,	1150	20ˢ·23	21ˢ·11	W.
,,	,,	23′ 46″·2	15′ 18″·2	,,
,,	1159	+0ˢ·963	−0ˢ·037	Kapteyn.
31	1219	17″·99	16″·99	,,

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ERRATA IV.—GILLISS'S SOUTH CIRCUMPOLAR CATALOGUE 1850 = *g.—continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc. (W. = Private Communication from the Washington Observatory).
32	1265	0′	30′	W.
33	1284	...	...	Kapteyn :—The 1st dec. seems to be correct.
				,, g−C.P.D. = −5ˢ·6
36	1409	...	...	
37	1459	32ᵐ 6ˢ·18	36ᵐ 6ˢ·36	W. Same star as 1497.
,,	,,	45″·6	48″·1	
38	1475	...	...	Kapteyn :—The 2nd dec. seems to be correct.
,,	1486	34ᵐ 51ˢ·23	33ᵐ 51ˢ·75	W. Same star as 1478.
,,	,,	28″·5	28″·4	,, to Ristenpart.
,,	1492	35ᵐ	36ᵐ	Kapteyn.
,,	1498	36ᵐ	37ᵐ	W.
39	1508	37ᵐ	36ᵐ	Kapteyn.
40	1548	+1ˢ·908	−1ˢ·908	,,
42	1639	41ˢ·25	51ˢ·25	W.
43	1693	9ˢ·70	19ˢ·70	Kapteyn :—Footnote is correct.
,,	1698	29ˢ·10	19ˢ·10	,, ,, ,, ,,
44	1719	1ᵐ	0ᵐ	,, Same star as 1712.
,,	1730	...	...	,, Error of −1 rev (= 27″·9) in Dec.?
45	1754	12ˢ·62	32ˢ·62	W.
,,	1767	+0ˢ·738	−0ˢ·738	Kapteyn.
47	1827	...	...	,, Dec. correct in footnote.
,,	1828	Same star as 1839.		W.
48	1870	...	...	Kapteyn :—g−C.P.D. = +1′·4.
,,	1878	...	...	,, ,, +0′·9.
,,	1879	34ˢ·779	35ˢ·779	Kapteyn :—Not in C.P.D. W :—Evidently = 1880 but source of error cannot be found.
,,	1880	34ˢ·438	35ˢ·438	Kapteyn.
,,	1895	See List of Missing Stars.		W. Record straight.
49	1926	35′ 13″·3	29′ 34″·6	,,
51	2015	...	...	Kapteyn :—g−C.P.D. = −12ˢ. P.M.?
52	2040	32ᵐ 25ˢ·39	37ᵐ 25ˢ·57	W. Same star as 2086.
,,	,,	24″·9	25″·8	
,,	2058	4ˢ·417	−4ˢ·417	Kapteyn.
53	2074	35ᵐ	25ᵐ	W. Same star as 1979.
,,	2083	...	...	Kapteyn :—Dec. right in body of Catalogue and not in footnote.
,,	2094	...	...	W. Same star as 2228, and is included in mean.
,,	2105	...	...	Kapteyn :—g − C.P.D. = +2′·0. In C.P.D. 4 observations.
54	2117	40ᵐ 19ˢ·05	39ᵐ 19ˢ·72	W. Same star as 2107.
,,	,,	25″·9	24″·6	
55	2162	70° 11′ 31″·4	69° 59′ 29″·5	W.
,,	2175	+10″·03	+11″·03	Kapteyn.
,,	2176	10″·03	11″·03	,,
,,	2177	3·99	10·99	,,
,,	2181	...	...	,, :—g−C.P.D. = −0′·8. S confirms C.P.D.
56	2186	48ᵐ 6ˢ·59	47ᵐ 59ˢ·79	W.
57	2255	See List of Missing Stars.		,, Record straight.
58	2266	...	...	Kapteyn :—g−C.P.D. = +2′·3. C.P.D. certainly correct.
61	2398	...	...	Kapteyn :—The R.A.'s of these stars to be interchanged?
,,	2407			
63	2491	...	...	Kapteyn :—g−C.P.D. = −1′·6.
,,	2495	44ˢ·92	34ˢ·92	W.
64	2518	23ᵐ	28ᵐ	,,
65	2567	...	...	,, Record straight.
,,	2570	29ᵐ	30ᵐ	Kapteyn :—Same star as 2584.
69	2726	...	...	,, Dec. right in body of Catalogue and not in footnote.
,,	2733	33ˢ·55	33ˢ·65	W. Same star as 2734.
,,	,,	10′ 30″·0	47′ 34″·7	
70	2750	47ᵐ	46ᵐ	Kapteyn.

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ERRATA IV.—GILLISS'S SOUTH CIRCUMPOLAR CATALOGUE 1850 = *g.—continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc. (W. = Private Communication from the Washington Observatory).
71	2809	53^m	52^m	Kapteyn.
,,	2815	...	...	,, Dec. requires − 1 wire interval (4′15″±).
,,	2824	$5^h\ 46^s.04$	$55^m\ 14^s.06$	W.
73	2874	$57^s.86$	$47^s.86$	,,
74	2944	See Missing Stars.		,, Record straight.
75	2972	35′	25′	,,
80	3179	...	...	Kapteyn:—Dec. correct in body of Catalogue and not in footnote.
83	3303	$34^m\ 57^s.15$	$35^m\ 7^s.15$	W.
84	3328	36^m	27^m	,, Same star as 3201.
86	3399	5^h	7^h	,, Same star as 5058.
87	3432	...	...	,, Record straight. Kapteyn suggests -4^m and equal to 3381.
90	3565	5^h	4^h	
91	3604	$54^m\ 48^s.15$	$47^m\ 29^s.84$	W. Same star as 3485.
,,	,,	19″.1	19″.9	
,,	3611	...	...	Kapteyn:—C.P.D. agrees with C.Z.
92	3628	...	...	,, One of these two stars of *g* probably in error in dec. and identical with the star C.P.D. −69°, No. 547. The other missing. The difference of $1^s.52$ in *g* seems to exclude the hypothesis that the two stars are in reality identical.
,,	3629	...	...	
		See Nos. 473-4, p. 19A. *ante.*		
,,	3652	27′ 58″.9	29′ 49″.9	Same star as 3651.
96	3804	9^m	10^m	W.
97	3828	...	...	Kapteyn:—*g* − C.P.D. = +0′.6. C.P D. certainly fairly correct.
,,	3831	$-14^s.402$	$-13^s.402$	Kapteyn.
,,	3860	...	...	,, Dec. right in body of Catalogue and not in footnote.
,,	3865	...	...	Kapteyn:—*g* − C.P.D. = − 2′.0.
98	3903	$-0^s.538$	$+0^s.538$	,,
99	3927	$18^m\ 15^s.45$	$19^m\ 15^s.21$	W.
,,	,,	6″.0	7″.9	,,
,,	3932	30′ 53″.0	32′ 46″.8	,,
,,	3938	1·752	0·752	Kapteyn.
101	3991	Gould's dec.	Gould's R.A.	,, In footnote—*g*'s R.A. is correct.
,,	3997	$37^s.06$	$32^s.06$	Washington.
,,	4003	$-2^s.084$	$-7^s.084$	Kapteyn.
102	4055	26^m	...	Same star as 4085, and is included W.
103	4091	$54^s.85$	$34^s.85$	W.
105	4171	...	...	Kapteyn:—R.A. right in body of Catalogue and not in footnote.
106	4192	35^m	36^m	Kapteyn.
107	4236	See Missing Stars.		
108	4268	$-1^s.072$	$-2^s.072$	Kapteyn.
,,	4283	...	...	,, Assume error of 1 wire interval (4′16″) in δ by which star becomes identical with 4281.
,,	4287	$42^m\ 0^s.13$	$41^m\ 59^s.80$	W. Same star as 4285.
,,	,,	39′ 48″.6	35′ 22″.2	
,,	4290	$12^s.59$	$52^s.51$	W.
109	4332	...	...	Kapteyn:—Dec. right in body of Catalogue and not in footnote.
,,	4342	45^m	46^m	Kapteyn:—Assumed error of 1^m in R.A. and star identical with 4354.
111	4392	50^m	43^m	W.
,,	4396	50^m	49^m	Kapteyn.
112	4437	69°	68°	W.
,,	4451	...	...	Kapteyn:—Evidently positions correct in body of Catalogue and supposition of footnote to be rejected.
,,	4459	...	...	
,,	4460	$45^s.25$	$45^s.32$	W. Same star as 4461.
,,	,,	22′ 3″.0	0′ 4″.0	

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ERRATA IV.—GILLISS'S SOUTH CIRCUMPOLAR CATALOGUE 1850 = *g*.—*continued*.

Page.	Star.	For	Read.	Authority, Remarks, etc. (W. = Private Communication from the Washington Observatory).
113	4487	$-10^s.504$	$-11^s.44\pm$	Kapteyn.
115	4567	...	...	Kapteyn :—*g* − C.P.D. = $-2'\pm$.
,,	4572	...	...	,, Correction required of +1 wire interval ($4'\ 15''\pm$).
118	4668	...	...	Kapteyn :—*g* − C.P.D. = $+10^s$.
,,	4696	14^m	15^m	W.
,,	4700	See Missing Stars.		,, Record straight.
,,	4702	$15^m\ 4^s.55$	$16^m\ 4^s.39$	W. Same star as 4716.
,,	,,	$5''.4$	$3''.9$	
119	4708	15^m	14^m	Kapteyn.
,,	4731	...	...	,, Third observation of 4734, at least I cannot find any authority for the star's duplicity.
120	4749	...	...	Kapteyn :—Dec. requires +1 wire interval ($4'16''\pm$)?
,,	4757	...	...	,, ,, ,, ,, ,, ,, ,,
122	4836	$24^m\ 39^s.33$	$29^m\ 38^s.97$	W. Same star as 4903.
,,	,,	$50'\pm$	$46'\ 44''.2$	
,,	4843	25^m	26^m	Kapteyn :—G confirms C.P.D.
,,	4847	$37^s.83$	$57^s.83$	,, Position of C.P.D. agrees with that of g 514 which indicates +30$^{secs.}$ to *g*.
123	4884	See also No. 7100.		
124	4941	...	...	Kapteyn :—See footnote in *g*. The C.P.D. agrees with Z.C.
126	4998	$37^m\ 15^s.88$	$36^m\ 38^s.30$	W.
127	5029	See Missing Stars.		
,,	5057	$51^s.72$	$49^s.11$	W. Same star as 5056.
,,	,,	$66°\ 7'26''.2$	$65°\ 58'57''.0$	
129	5144	...	...	Kapteyn :—Dec. correct in footnote to *g*.
130	5146	...	...	Kapteyn :—Dec. right in body of Catalogue and not in footnote.
,,	5149	...	...	Kapteyn :—Dec. correct in footnote to *g*.
,,	5170	51^m	50^m	,, In position of *g* certainly no star on plates. R.A. of C.P.D. certainly correct.
131	5186	$50'$	$47'$	Kapteyn :—Dec. of Z.C. agrees with C.P.D.
132	5242	...	...	Kapteyn :—Comparison with the C.P.D. suggests that *g*'s declinations have been interchanged.
,,	5246	...	...	
133	5273	$58^m\ 1^s.74$	$57^m\ 51^s.30$	W.
,,	5281	...	...	Kapteyn :—*g* dec. correct in body of Catalogue and not in footnote.
134	5318	See Missing Stars.		W. Record straight.
,,	5336	$3^m\ 36^s.98$	$2^m\ 36^s.91$	W. Same star as 5327.
,,	,,	$54'\ 52''.8$	$55'\ 1''.0$	
,,	5343	$21^s.91$—$51'\ 20''.4$	$21^s.93$—$50'\ 45''.3$	W. to Ristenpart :—C.P.D. −65°, 867.
135	5348	$29^s.32$—$50'\ 45''.9$	$19^s.30$—$51'\ 19''.8$	,, ,, ,, ,, −65°, 866.
,,	5355	$55'$	$54'$	Kapteyn :—Indicated by G. and Z.C. Star not in C.P.D., being covered by C.P.D.—46°, 2202.
,,	5367	...	...	Kapteyn :—*g* − C.P.D. = -47^s confirmed by Z.C. Probably wire in error ($17^s \times$ sec. $68\frac{1}{4}° = 45^s.9$).
136	5401	...	...	Kapteyn :—Dec. in body of Catalogue correct and not in footnote.
,,	5406	$25'$	$5'$	W.
,,	5423	See Missing Stars.		,, Record straight.
138	5493	...	...	,, Same as 5494 and is included.
139	5526	See Missing Stars.		,, Record straight
140	5575	$32^s.54$	$42^s.54$	,,
141	5595	$25'$	$27'$	Kapteyn.
,,	5622	$3^s.75$	$33^s.75$	,, Assumed error of 30^s in R.A. and star identical with *g* 5628.
,,	5625	...	...	Kapteyn :—The dec. in footnote is the correct one.
142	5639	$41'\ 22''.6$	$24'\ 31''.5$	W.
143	5668	34^m	33^m	Kapteyn :—Same star as 5654.
,,	5673	35^m	34^m	,, Z.C. confirms C.P.D.

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ERRATA IV.—GILLISS'S SOUTH CIRCUMPOLAR CATALOGUE 1850 =*g*.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc. (W. = Private Communication from the Washington Observatory).
143	5677	8^h	10^h	Kapteyn :—Same star as 7233, proved by identification as p. 3167.
,,	5680	$2^s{\cdot}72$	$25^s{\cdot}81$	W.
,,	5703	See Missing Stars.		,, Record straight.
144	5722	$42'$	$47'$	Kapteyn.
,,	5724	40^m	45^m	,, Same star as 5783. Cape :—1890, Jan. 18, no star $=9{\cdot}0^m$ in *g*'s position. 1899, Mar. 19, no star $=g$ 5724.
,,	5732	$4c^m$	43^m	W.
,,	5733	$44^s{\cdot}62$	$45^s{\cdot}68$	,, Same star as 5735.
,,	,,	$84^\circ\ 27'\ 10''{\cdot}7$	$87^\circ\ 27'\ 11''{\cdot}0$	
,,	5736	$19'\ 17''{\cdot}1$	$13'\ 0''{\cdot}5$	,,
,,	5739	41^m	40^m	Kapteyn.
145	5756	42^m	47^m	,, Same star as 5813. Cape :—1899, Jan. 18 and Mar. 19, no star $=9{\cdot}0$ mag. in *g*'s position.
,,	5770	...	...	Kapteyn :—These 3 stars all observed at the same epoch seem to have an error of two wire intervals (about $8\frac{1}{2}'$), in dec. 5772 is also $6^s{\cdot}5$ different in R.A. from C.P.D. Z.C. confirms C.P.D. position. W :—*g* to be corrected by -2^m. C.P.D. $-70°$, 816 gets a *g*, 818 loses it.
,,	5772	...	...	
,,	5776	...	...	
147	5864	52^m	51^m	Kapteyn :—In *g*'s position no star in 6 sweeps in 3 pairs of plates. In C.P.D. 6 obs.
148	5873	$41'$	$42'$	Kapteyn :—Declination right in footnote.
149	5932	58^m	57^m	,, Z.C. confirms C.P.D.
,,	5934	...	...	,, *g*—C.P.D. $=-1'{\cdot}0$. Dec. of C.P.D. certainly correct.
150	5955	0^m	1^m	Kapteyn.
,,	5961	...	...	,, *g* seems to require—1 wire interval in dec. (about $4\frac{1}{4}'$)
151	5995	...	...	Kapteyn :—reduced to 1875 *g* $9^h\ 4^m\ 0^s{\cdot}1$ $-67^\circ\ 27'{\cdot}1$ (1 obs.) Z.C. $0{\cdot}1$ $26{\cdot}7$ (1 ,,) C.P.D. $0{\cdot}5$ $26{\cdot}7$ (4 ,,) Therefore no p.m., but error of 1 rev. in dec. in *g*. See also footnote in *g*.
,,	6014	...	...	Kapteyn :—*g* —C.P.D. $=-10^s{\cdot}2$.
152	6028	$50^s{\cdot}08$	$49^s{\cdot}46$	W. Same star as 6027.
,,	,,	$82^\circ\ 17'\ 34''{\cdot}6$	$81^\circ\ 46'\ 16''{\cdot}6$	
,,	6047	Lac. 3911	Anon.	This is Cape 1890, No. 1035.
,,	6050	9^h	10^h	W. Same star as 6824.
153	6073	$-16^s{\cdot}473$	$-28^s{\cdot}473$	Kapteyn :—Star identical with 6070.?
155	6156	$17^m\ 50^s{\cdot}96$	$18^m\ 20^s{\cdot}10$	W. Same star as 6164.
,,	,,	$17'\ 35''{\cdot}8$	$26'\ 2''{\cdot}5$	
156	6213	$55^s{\cdot}29$	$55^s{\cdot}23$	W. Same star as 6212.
,,	,,	$22'\ 50''{\cdot}8$	$5'\ 53''{\cdot}2$	
157	6242	...	...	Kapteyn :—We have (1875)— *g* $9^h\ 25^m\ 8^s{\cdot}2$ $-63^\circ\ 47'{\cdot}8$ 1850·3 C.G.A. $16{\cdot}2$ $47{\cdot}7$ 188c·3 C.P.D. $15{\cdot}5$ $47{\cdot}6$ 1886·3 *g* must therefore be in error about 8^{secs}.
,,	6244	$24^m\ 34^s{\cdot}58$	$27^m\ 34^s{\cdot}76$	W. Same star as 6285.
,,	,,	$18'\ 24''{\cdot}2$	$17'\ 54''{\cdot}0$	
,,	6248	24^m	29^m	W.
158	6268	26^m	28^m	Kapteyn :—Star identical with 6293.
,,	6276	26^m	28^m	,, ,, ,, ,, 6301.
,,	6299	...	...	,, *g*—C.P.D. $=0''{\cdot}5$. Being re-observed with the Cape T.C.
159	6308	...	...	Kapteyn :—*g* requires—1 wire interval in dec. $(=4\frac{1}{4}'\pm)$.
,,	6324	$29^m\ 59^s{\cdot}97$	$30^m\ 0^s{\cdot}18$	W. Star identical with 6325.
,,	,,	$67^\circ\ 22'\ 6''{\cdot}8$	$66^\circ\ 58'\ 34''{\cdot}6$	

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ERRATA IV.—GILLISS'S SOUTH CIRCUMPOLAR CATALOGUE 1850 = *g*.—*continued*.

Page.	Star.	For	Read.	Authority, Remarks, etc. (W. = Private Communication from the Washington Observatory).
161	6421	...	...	Kapteyn :—g −C.P.D. = −5ˢ.
164	6508	−42ˢ·152	−41ˢ·116	
,,	6541	...	...	Kapteyn :—R.A. of C.P.D. agrees with that of footnote in g. There remains however a divergence of 0′·6 in Dec.
166	6588	50′	46′	Kapteyn.
,,	6600	51ᵐ 34ˢ·03	56ᵐ 33ˢ·06	W. Star identical with 6652.
,,	,,	57″·7	56″·0	
,,	6617	Z.C. 4238.	Anon.	Kapteyn :—Identification erroneous and assumption in footnote therefore wrong. Both g 6617 and Z.C. 4238 are contained in the C.P.D.
168	6676	58ᵐ	56ᵐ	Kapteyn :—Star identical with 6656.
,,	6698	...	...	,, g − Z.C. = − 1ˢ·01 and 4′ 9″·4. Assuming an error of 1 wire interval in dec. ($4\frac{1}{4}'\pm$) still leaves a divergency. Being re-observed in Cape Transit Circle.
169	6725	8ˢ·26	8ˢ·46	W. Star identical with 6727.
,,	,,	36′ 54″·7	19′ 54″·8	
,,	6729	3ᵐ	2ᵐ	Kapteyn :—C.P.D. indicates R.A. requires −1ᵐ, Dec. +0′·3, Z.C. indicates R.A. requires −59ˢ·35, Dec. +9″·7.
171	6816	9ᵐ 8ˢ·48	8ᵐ 24ˢ·51	W. Star identical with 6813.
,,	,,	41″·0	37″·6	
172	6831	9ᵐ	10ᵐ	Kapteyn.
173	6877	39′	38′	,, C.P.D. agrees with Z.C. See g's footnote.
174	6925	53ˢ·45	53ˢ·53	W. Star identical with 6926.
,,	,,	0′ 28″·0	6′ 26″·6	
,,	6944	...	...	Kapteyn :—g −C.P.D. = +14ˢ and −1′·1. P.M.? The position in C.P.D. is certainly fairly correct. In the C.P.D. the star is assumed to be C.P.D. −84° 264 but on account of its much greater brightness C.P.D. −84° 263 has been adopted here. Being reobserved with the Cape T.C.
176	7009	+1ˢ·628	+1ˢ·928	Kapteyn.
178	7097	...	...	Kapteyn :—Both these stars require a correction in dec. of +1 wire interval ($4\frac{1}{4}'\pm$). The identity with h 4335 (double star) confirms this correction.
,,	7098	...	...	
,,	7100	10ʰ	7ʰ	W. Star identical with 4884.
180	7175	See Missing Stars.		,, Record straight.
,,	7178	...	...	Kapteyn :—g −C.P.D. = −2′·5. W. Record straight.
183	7286	...	...	Kapteyn :—g − C.P.D. = −4ˢ. Z.C. confirms. Notwithstanding the two obs. in g an error in R.A. seems more probable than p.m.
184	7311	40ˢ·24	2ˢ·74	Kapteyn :—R.A. correct in footnote of Gilliss' Catalogue.
,,	7343	42ᵐ 34ˢ·47	43ᵐ 8ˢ·11	W. Star identical with 7354.
,,	,,	28″·7	28″·4	
187	7441	...	...	Kapteyn :—Requires +1 wire interval in dec.? This would make the position agree somewhat better with C.P.D. −74° 749. It seems somewhat more probable, however, that Gilliss will have observed C.P.D. −74° 748 which is a brighter star.
,,	7462	...	...	Kapteyn :—C.P.D. = 57′·4 ; ,, g = 56·5 ; ,, Z.C. = 59·4 — Dec. of C.P.D. certainly correct.
188	7475	See Missing Stars.		W. Record straight.
,,	7476	...	...	Kapteyn :—The first of g's decs. seems to be the correct one by comparison with the C.P.D.
,,	7495	52′ 35″·9	44′ 6″·2	W.

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ERRATA IV.—GILLISS'S SOUTH CIRCUMPOLAR CATALOGUE 1850 = *g.—continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc. (W. = Private Communication from the Washington Observatory).
189	7511	...	...	Kapteyn :— 1875 *g* 10h 56m 50s·3 −66° 56′·7 Z.C. 56 40·7 56·7 C.P.D. 56 40·0 56·9 } Error of about 10secs. in *g*.
190	7561	58m 52s·04	59m 52s·12	W. Star identical with 7576.
,,	,,	46″·8	40″·0	,, ,, ,, ,, ,,
,,	7579	11h	12h	,, Star identical with 8418.
191	7610	2m	1m	Kapteyn :—In position of *y* certainly no star on plates.
,,	7618	−2s·285	−2s·262	Kapteyn :—With this corrected precession there still remains *g* − C.P.D. = −8secs. R.A. of C.P.D. certainly fairly correct. W :—One wire in R.A.
192	7659	6m 36s·55	7m 31s 02	W.
193	7673	...	...	Kapteyn :—Identification with Z.C. 11h 630 and footnote erroneous. Both *g* 7673 and Z.C. 630 are correct and contained in the C.P.D.
,,	7675	...	...	Kapteyn :—Identification with C.P.D. −69°1498 assumed a correction of 1 wire interval in R.A. (about −48secs.).
195	7765	14m 49s·37	11m 49s·22	W. Star identical with 7719.
,,	,,	12″·0	12″·7	
196	7788	...	...	Kapteyn :—Identification with C.P.D. −71°1245 assumes an error of 1 wire interval in R.A. (= −54secs. ±).
197	7845	...	...	W. = 7981 ; already included.
,,	7855	...	...	Kapteyn :— 1875 *g* 11h 22m 22s (2 obs.) Z.C. 32·4 (1 obs.) C.P.D. 31·0 } *g* must therefore be about 10secs. in error..
198	7903	...	...	Kapteyn :—Dec. right in body of Catalogue and not in footnote.
199	7927	24s·16	26s·85	W. Star identical with 7928.
,,	,,	65° 0′ 5″·3	64° 34′ 53″·9	
,,	7943	...	...	W. Error in dec., same star as 7944 and is already included.
202	8045	...	...	Kapteyn :—*g*−C.P.D. = +10secs. P.M.? In *g*, 5 obs., in C.P.D. 4 obs.
203	8081	30s·48	21s·92	W.
205	8162	25′ 48″·7	6′ 53″·1	,,
208	8302	...	...	Gould's dec. is substantially correct.
211	8395	42′	52′	Kapteyn :—This follows from the identification with Z.C. 4094. (This is the companion to the double star *h* 4498).
,,	8397	...	...	Kapteyn :—C.P.D. indicates a correction of 1 wire interval in dec. (about +4½′).
,,	8407	...	...	
212	8447	3′	2′	Kapteyn.
213	8473	−20″·65	−20″·05	,,
214	8515	42′	43′	,,
,,	8537	See Missing Stars.		W. Record straight.
216	8587	...	...	Kapteyn :—Dec. right in body of Catalogue and not in footnote.
218	8671	...	...	Kapteyn :—Dec. right in body of Catalogue and not in footnote.
,,	8689	25m	26m	Kapteyn :—In C.P.D. 4 obs. In *g*'s position no star on 2 pairs of plates.
,,	8702	...	...	Record confused. W.
221	8790	83°	82°	W.
,,	8808	See Missing Stars.		W. Record straight.
222	8865	−15″·76	−19″·76	Kapteyn.
223	8876	See Missing Stars.		W. Record straight.

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Page.	Star.	For	Read.	Authority, Remarks, etc. (W. = Private Communication from the Washington Observatory).
223	8894	See Missing Stars.		W. Record straight. Wires for dec. not recorded; reduced for 2.
,,	,,	19″·22	19″·72	Kapteyn.
224	8933	6ˢ·88	6ˢ·70	W. Star identical with 8932.
,,	,,	0′ 7″·9	12′53″·4	
,,	8938	See Missing Stars.		W. Record straight.
226	9002	...	...	Kapteyn:—The C.P.D. indicates a correction of 1 wire interval in dec. (+4½′±).
,,	9016	+ 11ˢ·771	+12ˢ·598	Kapteyn.
,,	9018	...	...	,, Dec. right in body of Catalogue and not in footnote.
227	9060	...	...	Kapteyn:—In *g* it is remarked that the Decs. of these two stars may have been interchanged. The C.P.D. shows that this has been the case.
228	9070	...	...	
229	9116	...	...	Kapteyn:—*g*−C.P.D. = −3ˢ±. W:—Three wires observed in R.A. in good agreement.
,,	9131	...	...	Kapteyn:—Dec. right in body of Catalogue and not in footnote.
,,	9141	2ᵐ	1ᵐ	Kapteyn.
231	9212	...	...	,, *g*−C.P.D. = −8ˢᵉᶜˢ.
,,	9220	delete.	...	W. Same as *g* 8514.
236	9404	+6ˢ·727	+4ˢ·727	Kapteyn.
,,	9406	+4ˢ·434	+6ˢ·434	,,
237	9437	...	...	,, Assumed correction of about −17′ makes star identical with 9438. In *g*'s position no star on plate.
,,	9440	...	...	Kapteyn:—Assumed correction of about −17′ makes star identical with 9441. In *g*'s position no star on plate.
,,	9452	...	...	Kapteyn:—Evidently R.A. correct in body of Catalogue and suggestions in footnote to be rejected.
238	9498	30ᵐ	31ᵐ	Kapteyn:—Confirmed by C.P.D.
239	9508	+6ˢ·468	+4ˢ·468	,,
240		9953	9553	,, The numbers have been erroneously printed as 9953 and 9954 in *g*. For the former of these stars see list of missing objects.
,,		9954	9554	
,,	9553	10ˢ·01	50·01	W.
,,	9569	...	...	Kapteyn:— 1875. *g* 13ʰ 38ᵐ 41ˢ; Z.C. 50·7; C.P.D. 51·0. Therefore an error in *g*.
,,	9577	...	...	W. Record straight.
242	9628	See Missing Stars.		,, Record straight.
243	9704	...	...	Kapteyn:—A correction of 1 wire interval in dec. is suggested by the C.P.D. (= −4½′±).
244	9739	5ˢ·280	6ˢ·280	Kapteyn.
245	9773	5ˢ·652	4ˢ·652	,,
,,	9776	52ᵐ	53ᵐ	,, G confirms the C.P.D. Identical with [9787.
,,	9783	5ˢ·304	6ˢ·304	,,
246	9789	6ˢ·026	7ˢ·026	,,
247	9831	51ˢ 66	51ˢ·86	W. Star identical with 9832.
,,	,,	19′ 40″·0	32′ 15″·2	
,,	9852	59ᵐ	60ᵐ	Kapteyn:—C.P.D. confirmed by Z.C.
,,	9856	59ᵐ	60ᵐ	,,
,,	9861	59ᵐ	60ᵐ	,, ,, ,, ,, ,, Divergence from Z.C. pointed out in footnote of *g*.
,,	9865	59ᵐ	60ᵐ	Kapteyn.
248	9896	5ˢ·497	6ˢ·497	,,

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Page.	Star.	For	Read.	Authority, Remarks, etc. (W. = Private Communication from the Washington Observatory).
249	9910	...	...	Kapteyn:—g − C.P.D. = + 16$^{secs.}$ (re-measured, + 11$^{secs.}$). Not very remarkable as the position in the C.P.D. has not been measured in rectangular co-ordinates. W:—One wire in a.
250	9957	5^{s}·287	6^{s}·287	Kapteyn.
,,	9977	8^{m}	9^{m}	,, Star identical with 9988.
251	9991	17′ 27″·0	39′ 46″·1	W.
,,	10011	...	...	,, Record straight. Record has been changed 10′ in ink.
253	10089	16^{m}	15^{m}	Kapteyn:—In position of g certainly no star on plates.
258	10295	− 17″·87	− 15″·87	Kapteyn.
259	10314	...	...	,, g − C.P.D. = − 17^{s}·6 and − 10″·7. P.M.? Being reobserved on meridian with Cape T.C.
262	10431	− 14″·35	− 15″·35	Kapteyn.
,,	10435	− 14″·34	− 15″·34	,,
,,	10448	...	...	,, Correction of 1 wire interval in R.A. (about +49^{s}) makes the former identical with g 10466, and the latter with an 8·4^{m} star in the C.P.D.
,,	10449	...	...	
264	10524	40′	38′	W.
265	10557	50′	59′	W.
,,	10561	45^{s}·09	45″·47	W. Star identical with 10562.
,,	,,	43′ 7″·1	47′ 43″·6	
,,	10567	...	...	Kapteyn:—Dec. right in body of Catalogue and not in footnote.
266	10597	47^{s}·34	48^{s}·30	W. Star identical with 10598.
,,	,,	22′ 51″·7	14′ 28″·9	
,,	10598	...	...	Kapteyn:—g − C.P.D. = − 1′·0. Dec. of C.P.D. certainly correct.
267	10650	+ 5^{s}·256	+ 6^{s}·256	Kapteyn.
,,	10654	5^{s}·331	6^{s}·331	,,
269	10726	59^{m} 40^{s}·68	58^{m} 4^{s}·22	W.
270	10754	...	...	Kapteyn:—A correction of 1 wire interval (about − 4½′) is indicated by the C.P.D.
271	10791	4^{m}	5^{m}	Kapteyn:— In C.P.D. 3 obs.
,,	10821	...	...	,, A correction of 1 wire interval (about − 4½′) is indicated by the C.P.D.
272	10835	7^{m} 2^{s}·32	9^{m} 2^{s}·54	Star identical with 10858. W.
,,	,,	27″·5	27″·0	
273	10900	11^{m}	12^{m}	Kapteyn.
,,	10901	− 15″·43	− 13″·43	,,
274	10916	+ 5^{s}·319	+ 6^{s}·319	,,
275	10949	...	...	W. = 11224 already included.
276	10997	...	...	Kapteyn:—g − C.P.D. = − 1′·1. Dec. of C.P.D. certainly correct.
278	11089	...	...	Kapteyn:—A correction of 1 wire interval (about + 4½′) is indicated by the C.P.D.
279	11142	17^{s}·356	17^{s}·244	Kapteyn:—Dec. right in footnote.
282	11241	36^{m}	37^{m}	,, In position of g certainly no star on plates.
283	11276	...	...	Kapteyn:—A correction of 1 wire interval (about − 4½′) is indicated by the C.P.D.
,,	11284	39^{m}	42^{m}	Kapteyn.
,,	11304	...	...	,, g − C.P.D. = − 6′. (This is however only about 1c″ of arc).
284	11306	...	...	Kapteyn:—A correction of 1 wire interval (about + 4½′) is indicated by the C.P.D.
,,	11345	39′ 35″·0	26′ 57″·5	W.
285	11369	...	...	Kapteyn:—Evidently R.A. correct in body of Catalogue and not in footnote.

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Page.	Star.	For	Read.	Authority, Remarks, etc. (W. = Private Communication from the Washington Observatory).
287	11453	...	...	W. 2^h wrong; already included. = 13000.
,,	11459	15^h	14^h	„ Star identical with 10607.
288	11482	...	...	„ = 11206; already included.
,,	11494	...	...	Kapteyn :—g − C.P.D. = $+7^s.6$ (only = 6″).
289	11514	...	...	„ R.A. correct in footnote.
290	11574	...	...	W. = 13102, -2^{hrs} error in copying.
291	11599	...	...	Kapteyn :—Dec. correct in footnote.
,,	11616	$56^s.15$	$36^s.15$	W.
292	11657	$7^s.947$	$6^s.947$	Kapteyn.
294	11713	$31^s.03$	$30^s.32$	W. Star identical with 11712.
,,	,,	$67° 54' 28''.2$	$68° 15' 26''.4$	
,,	11717	$50^s.536$	$53^s.536$	Kapteyn.
,,	11735	See Missing Stars.		W. Record confused.
297	11848	$27^s.80$	$36^s.73$	W. Star identical with 11853.
299	11909	...	...	Kapteyn :— g $16^h 29^m 7^s$ $-81° 11'.6$ (1875); C.P.D. $16\ 29\ 11$ $81\ 21'.6$. Dec. of C.P.D. certainly correct. (The alteration of the prec. will remove the discordance in R.A.).
,,	11942	$59' 2''.0$	$55' 55''.4$	W. Min. of R.A. doubtful. (C.P.D. indicates however, that it is correct as printed.)
300	11953	$5^s.762$	$6^s.762$	Kapteyn.
,,	11966	29^m	28^m	W.
303	12104	6^s 958	$5^s.958$	Kapteyn.
304	12108	...	...	„ Evidently dec. right in body of Catalogue and not in footnote.
,,	12140	$19'$	29	W.
305	12157	...	...	Kapteyn :— Error of about 10^s viz. g (1875) $16^h 45^m 44^s.5$; Z.C. $34^s.4$; C.P.D. $33^s.5$
,,	12159	...	...	Kapteyn :—Dec. correct in footnote.
,,	12173	$19^s.74$	$14^s.74$	Washington gives as the correction + 5 secs. but the C.P.D. indicates $-5^{secs.}$.
306	12189	$7^s.972$	$6^s.972$	Kapteyn.
307	12262	...	...	„ Dec. right in body of Catalogue and not in footnote.
308	12279	52^m	53^m	Kapteyn :—Star identical with 12295.
309	12309	...	...	„ The C.P.D. indicates a correction of wire interval (about $-4\frac{1}{2}'$).
,,	12312	$5^s.999$	$6^s.999$	Kapteyn.
,,	12316	See Missing Stars.		W. Record straight.
310	12347	$53^s.57$	$3^s.57$	„
,,	12351	$59' 7''.7$	$(54' 22''.1)$	„
,,	12378	$16^h 59^m 24^s.28$	$17^h 9^m 24^s.46$	W. Star identical with 12485.
,,	,,	$25''.3$	$26''.8$	
,,	12383	$16^h 59^m 47^s.53$	$17^h 0^m 35^s.20$	W.
311	12401	...	...	Kapteyn :—Dec. correct in footnote.
312	12432	$8^s.622$	$6^s.622$	„
314	12522	...	...	„ Evidently dec. right in body of Catalogue and not in footnote.
315	12552	$2^s.49$	$2^s.36$	W. Star identical with 12551.
,,	,,	$38' 32''.0$	$(39' 0''.9)$	
,,	12583	$25' 42''.8$	$34' 9''.6$	W.
316	12600	$5^s.49$	$5^s.80$	W. Star identical with 12601.
,,	,,	$16' 52''.7$	$11' 23''.0$	
317	12638	$7^s.769$	$6^s.769$	Kapteyn.
320	12769	32^m	33^m	„ Star identical with 12785.
321	12787	33^m	13^m	W. Star identical with 12544.
322	12831	17^h	18^h	„ Star identical with 13503.
,,	12838	$7^s.160$	$6^s.160$	Kapteyn.

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Page.	Star.	For	Read.	Authority, Remarks, etc. (W. = Private Communication from the Washington Observatory).
322	12854	$6^s.838$	$7^s.06\pm$	Kapteyn.
323	12874	See Missing Stars.		W. Record straight. Wire for dec. not recorded, reduced for 7.
,,	12881	41^m	43^m	Kapteyn :—Star identical with 12897.
,,	12885	17^h	18^h	W. Star identical with 13537.
324	12923	...	...	Kapteyn :—C.P.D. indicates a correction of 1 wire interval ($+4\frac{1}{4}'\pm$) in dec. and star to be identified with 12922. No star in *g*'s place; visual obs. 1899 July 18, 7-in.
,,	12932	45^m	46^m	Kapteyn.
325	12956	$47^m\ 45^s.72$	$46^m\ 44^s.81$	W. Star identical with 12946.
,,	,,	$59''.1$	$31''.2$	
,,	12968	$43^s.97$	$43^s.91$	W. Star identical with 12967.
,,	,,	$1'\ 36''.1$	$7'\ 37''.5$	
326	13014	52^m	53^m	Kapteyn :—Star identical with 13033.
,,	13017	...	...	Kapteyn:—Dec. seems to be right in body of Catalogue and not in footnote.
,,	13019	...	=13020	W.
327	13031	$53^m\ 19^s.63$	$51^m\ 20^s.24$	W. Star identical with 13004.
,,	,,	$41''.2$	$41''.5$	
,,	13036	$+7^s.624$	$+7^s.635$	I.
329	13114	$1^m\ 1^s.19$	$0^m\ 4^s.99$	W. Star identical with 13103.
,,	,,	$30''.3$	$31''.6$	
330	13153	$7^s.143$	$6^s.143$	Kapteyn.
,,	13166	...	...	W. Record straight. Probably $1^{rev.}$ wrong. Kapteyn :—*g* − C.P.D. = $+0''.6$. Dec. of C.P.D. certainly fairly correct.
,,	13179	7^m	6^m	W.
333	13298	$40^s.11$	$39^s.78$	,, Star identical with 13297.
,,	,,	$14'\ 50''.8$	$18'\ 26''.1$	,, Star identical.
334	13331	$35^s.61$	$15^s.61$	W.
,,	13341	$-1''.97$	$+1''.97$	Kapteyn.
336	13418	29^m	30^m	,, Star identical with 13429.
,,	13420	$7^s.207$	$6^s.207$	Kapteyn.
,,	,,	$-2''.57$	$+2''.57$	
,,	13421	29^m	28^m	,, Star identical with 13411.
337	13445	$31^m\ 28^s.05$	$32^m\ 27^s.68$	W. Star identical with 13452.
,,	,,	$22''.2$	$23''.2$	
339	13510	38^m	39^m	Kapteyn :— Star identical with 13519.
,,	13514	38^m	35^m	Washington.
342	13650	See Missing Stars.		W. =13648 ; already included.
343	13667	$40^s.02$	$40^s.17$	W. Star identical with 13668.
,,	,,	$31'\ 24''.6$	$48'\ 13'.5$	
,,	13683	$0^s.46$	$1^s.11$	W. Star identical with 13684.
,,	,,	$10'\ 17''.2$	$27'\ 31''.0$	
344	13732	...	...	Kapteyn:—The C.P.D. indicates a correction of 1 wire interval ($+4\frac{1}{4}'\pm$) in dec.
,,	13745	See Missing Stars.		W. Record straight.
345	13758	$21^s.22$	$31^s.22$	,,
346	13797	...	...	Kapteyn :—1850. *g* 1851·1 $19^h\ 6^m\ 37^s.9$ $-87°\ 51''.08$ (10 obs.). C.P.D. 1885·3 19 6 47·3 51·11. Being reobserved in Cape T.C.
,,	13803	...	...	Kapteyn :—Dec. right in footnote.
,,	13809	...	...	,, ,, ,, ,, ,,
347	13851	$10^m\ 3^s.51$	$0^m\ 3^s.65$	W. Star identical with 13736.
,,	,,	$48''.8$	$50''.4$	
348	13902	$152^s.799$	$149^s.59\pm$	Kapteyn.
349	13928	...	...	Kapteyn :—C.P.D. indicates a correction of 1 wire interval in dec. (about $+4\frac{1}{4}'$), then = 13927.
351	13988	22^m	23^m	W. Star identical with 13999.
352	14042	...	...	Kapteyn :—Dec. right in footnote.

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Page.	Star.	For	Read.	Authority, Remarks, etc. (W. = Private Communication from the Washington Observatory).
353	14066	...	...	Kapteyn:—The C.P.D. indicates a correction of 1 wire interval in dec. (about $-4\frac{1}{4}'$).
,,	14092	See Missing Stars.		W. Record straight.
354	14141	4′	17′	,,
355	14151	...	...	Kapteyn:—Evidently R.A. right in body of Catalogue and not in footnote.
,,	14176	$47^{s}.46$	$[57^{s}.46]$	Kapteyn:—A correction of $10^{secs.}$ is also indicated by the C.Z.
356	14187	38^{m}	39^{m}	W.
358	14288	$48^{m}\ 24^{s}.00$	$43^{m}\ 22^{s}.64$	,, Evidently recorded 5^{m} wrong. Star identical with 14241.
,,	,,	$22''.0$	$21''.6$	
360	14364	54^{m}	56^{m}	Kapteyn:—Certainly no star in position of *g* on *m* and *c* and two other pairs of plates.
361	14418	...	...	Kapteyn:—The C.P.D. indicates that the 2nd R.A. is most probably correct.
363	14501	8406	8331	
365	14555	$12^{m}\ 27^{s}.05$	$10^{m}\ 24^{s}.16$	W. Star identical with 14535.
,,	,,	$21''.4$	$13''.6$	
365	14577	...	...	Kapteyn:—The C.P.D. indicates a correction of 1 wire interval (about $-49^{secs.}$) in R.A. Without this correction the C.P.D. star would be the only one of this region not in *g*.
366	14610	$37^{s}.27$	(F) $41^{s}.35$ (G) $33^{s}.08$	W. Kapteyn:—*g*−C.P.D. = $-8^{secs.}$.
370	14761	See Missing Stars.		,, One wire reduces 1^{m} later.
,,	14766	...	...	,, = 14676; already included.
,,	14781	$+8^{s}.606$	$+6^{s}.606$	Kapteyn.
371	14800	16′ 10″.5	19′ 18″.7	W. [as 14681).
372	14840	...	...	,, No minute recorded. (Is perhaps same star
373	14876	$+5^{s}.843$	$+7^{s}.116$	Kapteyn:—This correction is proved by identification with G. 28666.
,,	,,	70°	76°	
,,	14880	44^{m}	45^{m}	Kapteyn:—By these corrections the stars become identical.
,,	14887	54′	55′	
374	14908	...	...	Kapteyn:—The C.P.D. indicates that the first dec. given is the right one.
376	15005	...	...	Kapteyn:—The C.P.D. indicates a correction of 1 wire interval in dec. (about $-4\frac{1}{4}'$).
377	15028	$0^{m}\ 4^{s}.96$	$3^{m}\ 4^{s}.99$	W. Star identical with 15053.
,,	,,	$30''.3$	$32''.2$	
,,	15029	0^{m}	2^{m}	Kapteyn:—Without this correction the C.P.D. star would be the only bright star of this region not contained in *g*.
380	15161	8731	8732	
,,	15165	$14''.03$	$15''.03$	Kapteyn.
,,	15166	$14''.04$	$15''.04$	,,
,,	15167	$5^{s}.290$	$8^{s}.290$	,,
,,	15169	...	...	,, Correction of 1 wire interval (about +4′ 15″) in dec. is indicated.
,,	15170	$14''.04$	$15''.04$	Kapteyn.
381	15203	...	...	W. Record confused. Probably 1 rev. wrong. Kapteyn:—*g*−C.P.D. = +0′.6.
,,	15208	9^{s}	19^{s}	Kapteyn:—the Z.C. confirms the C.P.D. No p.m.
387	15452	...	...	,, The 2nd dec. seems to be the right one.
388	15474	See Missing Stars.		W. Record confused.
,,	15486	$-16''.75$	$+16''.75$	Kapteyn.
389	15523	50^{m}	49^{m}	,, Star identical with 15515. In *g*'s position no star on plates.
390	15584	...	...	Kapteyn:—Dec. seems to be right in body of Catalogue and not in footnote.
391	15604	...	...	Kapteyn:—Dec. seems to be right in body of Catalogue and not in footnote.

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Page.	Star.	For	Read.	Authority, Remarks, etc. (W. = Private Communication from the Washington Observatory).
391	15623	0^m	1^m	W.
393	15696	$-17''\cdot72$	$+17'\cdot72$	Kapteyn.
395	15767	$26^s\cdot39$	$56^s\cdot60$	W. Star identical with 15777.
,,	,,	$11''\cdot1$	$8''\cdot9$	
396	15823	69°	66°	Harkness.
397	15853	$23^m\ 24^s\cdot45$	$22^m\ 22^s\cdot65$	W:—Identical with 15843.
,,	,,	$30''\cdot4$	$15''\cdot3$	
,,	15856	$+3\cdot277$	$+4\cdot277$	Kapteyn.
398	15877	26^m	25^m	,, Star identical with 15865.
,,	15895	$+7^s\cdot029$	$+6^s\cdot670$	,,
399	15943	$4^s\cdot531$	$4^s\cdot231$	,,
400	15976	77°	79°	W.
401	15991	...	...	Kapteyn:—g − C.P.D. = $+1'\cdot2$. Dec. of C.P.D. certainly correct.
,,	16018	$5^s\cdot267$	$6^s\cdot267$	Kapteyn.
402	16030	$17^s\cdot08$	$16^s\cdot55$	W.
,,	,,	$55'\ 1''\cdot6$	$54'\ 34''\cdot0$	
,,	16034	$35^s\cdot59$	$16^s\cdot55$	,, Star identical with 16030.
,,	,,	$34''\cdot3$	$34''\cdot0$	
,,	16037	...	...	Kapteyn:—Evidently first dec. correct.
403	16097	$47^s\cdot77$	$57^s\cdot77$	W.
405	16151	...	...	Kapteyn:—Dec. correct in footnote.
406	16204	...	...	,, g − C.P.D. = − $10^s\cdot3$ (= $5''\cdot0$), rather insignificant.
408	16292	$3^s\cdot701$	$6^s\cdot701$	Kapteyn.
409	16324	$4^s\cdot701$	$3^s\cdot701$	,,
411	16389	$4^s\cdot797$	$3^s\cdot797$	,,
,,	16394	$+4^s\cdot565$	$+3^s\cdot565$	,,
,,	16400	...	...	,, Dec. right in footnote.
,,	16407	...	...	,, Dec. evidently right in body of Catalogue and not in footnote.
412	16438	78°	75°	W.
,,	16451	$16^s\cdot43$	$26^s\cdot43$	,,
413	16491	$32^m\ 55^s\cdot90$	$31^m\ 56^s\cdot10$	,, Star identical with 16481.
,,	,,	$48''\cdot1$	$48''\cdot5$	
,,	16495	33^m	36^m	,,
415	16580	42^m	43^m	Kapteyn:—According to footnote the two obs. belong probably to same star. In this case the former is in error 1^m in R.A., and the latter $1'$ in dec. These corrections make the two stars identical with one star of the C.P.D.
416	16591	$11'$	$12'$	
417	16627	...	...	Kapteyn. R.A. correct in footnote.
418	16670	...	...	1875. ,, g $23^h\ 53^m\ 17^s\cdot45$ $-73^\circ\ 2'\ 1''\cdot9$ (1 obs.) Z.C. 12·02 2 3·2 (1 ,,) C.P.D. 11·9 2·2 Being reobserved with Cape T.C.
419	16709	$13^s\cdot76$	$34^s\cdot03$	W. Star identical with 16711.
,,	,,	$32''\cdot0$	$33''\cdot4$	

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ERRATA V.—GILLISS'S CATALOGUE 1850 = g.

Page.	Star.	For	Read.	Authority, Remarks, etc.
18	2^h 62	48°	46°	Kapteyn:—Identified with Lac. 657. No sensible p.m. in dec.
,,	80	...	...	Kapteyn:—Cape 1850 and C.P.D. concur in shewing that the second position is the correct one.
,,	3^h 87	$+1^s.972$	$+0^s.48\pm$	Kapteyn.
19	4^h 116	...	...	,, g − C.P.D. = − 2′·1. This is an error in g and not p.m. as is shewn by comparison.
,,	5^h 140	20′	30′	Kapteyn:—G., Z.C. and S. agree with C.P.D.
20	158	37′	39′	,, G. and Z.C. ,, ,, ,,
,,	161	38′	39′	,, ,, ,, ,, ,, ,,
,,	173	50′	51′	,, G., Z.C. and S. ,, ,, ,,
,,	183	46′	47′	,, Practically confirmed by Lac. and G.
21	195	$-2^s.153$	$+2^s.153$	,,
,,	207	−0·001	−0·50±	,,
22	6^h 252	13^m	15^m	,, g confirms the C.P.D. in this correction.
,,	258	...	...	,, These stars require -1^m in R.A. and their decs. interchanged. G. confirms the C.P.D.
,,	259	...	...	
,,	276	...	...	Kapteyn:—Correction of $1^{rev.}$ (about + 27″) required in dec. This is the double star *h* 3858, but the R.A.'s in g must have been interchanged by error as the smaller star is N. pr.
,,	277	−1″·47	−1″·77	
25	393	...	...	Kapteyn:—A correction of $1^{rev.}$ (about $-4\frac{1}{4}'$) in dec. is required.
26	7^h 474	...	...	Kapteyn:—The dec. is about 40″ wrong, cannot be p.m. as is proved by comparison with Z.C. and G.
27	488	...	...	Kapteyn:—Dec. in error 10′·8. See also B.A.C. 2450 in Cape 1850 Catalogue.
,,	516	26^m	25^m	Kapteyn.
28	576	11″·6	39″·5	,, Dec. in error $1^{rev.}$
30	663	0″·49	9″·49	,,
32	8^h 750	Decs. should be interchanged.		,,
,,	751			,,
34	857	26′	27′	,, :—Cape 1850 confirms C.P.D.
,,	858	29^m	28^m	,, The enormous p.m. in R.A. in *g*'s Catalogue vanishes by applying this correction.
35	891	19′	24′	Kapteyn:—Same star as 892.
36	914	40^m	41^m	Ristenpart.
37	984	...	...	Kapteyn:—g − C.P.D. = +1′·2. Decs. of G. and Z.C. agree with C.P.D.
38	9^h 1018		1019	Kapteyn.
41	1154	$1^s.55$	$5^s.87$	,, If the R.A. are interchanged, then the former becomes identical with *g* 1155, and both agree excellently with the Z.C., G., and C.P.D.
,,	1156	$5^s.87$	$1^s.55$	
,,	1169	...	...	Kapteyn:—g − C.P.D. = + 0′·9. *g* confirms C.P.D. therefore g in error.
,,	1173	$54^m\ 47^s.36$	$55^m\ 8^s\pm$	Kapteyn:—Error of 1 wire interval in R.A. (about $21^{secs.}$), see in *g* where α is $21^{secs.}$ greater.
,,	1176	16′	[15′]	Kapteyn:—g−C.P.D. = −1′·1. *g* is 59″·5 smaller than g.
,,	10^h 1189	0^m	1^m	Kapteyn:—Confirmed by identity with p. 2849.
43	1253	$+3^s.565$	$+2^s.565$	Kapteyn.
44	1308	...	...	,, g −C.P.D. = $+4^s$. Also g−*g* = $+4^s.05$.
,,	1318	...	...	,, ,, ,, = $+7^s$. ,, g−*g* = $+5^s.51$.
,,	1334	43′	53′	,, = η Argûs.
45	1349	43^m	42^m	,, See also Z.C., *G.* and p.
,,	1357	46^m	45^m	,, ,, ,, G., etc.

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ERRATA V.—GILLISS'S CATALOGUE 1850 = g.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
45	10h 1371	+2s·615	+2s·715	Kapteyn.
46	1394	...	...	,, g − C.P.D. = +0′·6. Error and not p.m. as shewn by comparison with t.
,,	11h 1414	7′	6′	Kapteyn:—Lac., Z.C. and G. confirm C.P.D.
,,	1422	42′	43′	,, W.Z. confirms C.P.D. With this correction g's enormous p.m. vanishes.
48	1490	7′	8′	Kapteyn:—Error and not p.m. See Lac., G. and Z.C.
,,	12h 1525	62°	66°	Kapteyn:—Proved by identification with Lac. 5210.
50	13h 1593	58′	59′	Kapteyn:—*g* agrees with C.P.D.
,,	1595	7′	9′	,, Cape 1840 agrees with C.P.D.
,,	1602	...	...	,, g − C.P.D. = − 4s. g−*g* = −3s·75, therefore g in error.
,.	14h 1623	...	...	Kapteyn:—g − C.P.D. = − 3s. g−*g* = −2s·62, therefore g in error.
51	16h 1668	43m?	44m	Kapteyn:—See also note in g, p. 59.
,,	1672	58m?	57m	,, ,, ,, ,, ,, ,,
,,	1673	58m	57m	,, Confirmed by *g*.
52	17h 1678	...	...	,, g−C.P.D. = −1′·1. g−*g* = −0s·71 and −1′ 7″·6 therefore g's dec. is erroneous.
,,	1685	5s·992	5s·392	Kapteyn.
,,	1711	...	...	,, g−C.P.D. = +0′·5, g−*g* = 34″·5.
,,	1721	36′	46′	,, g−c. = +9′58″·7, thus confirming C.P.D.
,,	1722	30′	40′	,, g−*g* = +10′ 0″·5 ,, ,, ,,
53	18h 1764	44m	45m	,, See note in g, p. 59.
54	19h 1797	2s·979	5s·979	,,
,,	,,	23′	24′	,, *g* confirms C.P.D. [C.P.D.
55	20h 1829	...	...	,, Dec. in error and not p.m. p confirms
,,	1830	...	...	,, ,, ,, ,, ,, ,, ,, The decs. of these two stars apppear to be interchanged in g. There might also be some p.m. Both stars being observed with the Cape T.C.
,,	1843	56′	55′	Kapteyn:—Lac., Z.C. and G. confirm C.P.D.
,,	1846	...	...	,, g−C.P.D. = +4s. g−*g* = +3s·47.
57	22h 1918	...	...	,, g−C.P.D. = −1′·3. g−*g* = −1′12″·5, also ,, ,, = +2s. g−*g* = +1s·77.

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ERRATA VI.—THOME'S CORDOBA DURCHMUSTERUNG. = TH.

[References to the Cluster Catalogues contained in G.C. seem to be either wanting or to be very incomplete.]

Page.	Star.	For	Read.	Authority, Remarks, etc.
		ZONE—22°		
2	0h 388	31′·1	41′·1	Cordoba Results, vol. xvi.
,,	1h 450	mag. 9·1	9·7	,, ,, ,, xviii.
4	2h 868	22′·9	32′·9	,, ,, ,, xvi.
7	4h 1706	23ˢ·6	24ˢ·6	,, ,, ,, ,,
,,	1878	mag. 10	9·5	,, ,, ,, ,,
,,	1953	49ˢ·6	48ˢ·6	,, ,, ,, ,,
13	6h 3509	Ref. ...	S.D.	,, ,, ,, ,,
,,	3530	Ref. ...	S.D.	,, ,, ,, ,,
15	4234	...	Color.	,, ,, ,, ,,
,,	4278	...	,,	,, ,, ,, ,,
16	7h 4401	Ref. S.D.	...	,, ,, ,, ,,
,,	4463	19m 1ˢ·9	18m 59ˢ·9	,, ,, ,, xviii.
,,	4499	Ref. S.D.	...	,, ,, ,, xvi.
,,	4545	Ref. ...	S.D.	,, ,, ,, ,,
17	4738	,,	S.D.	,, ,, ,, ,,
,,	4783	mag. 10	9·3	,, ,, ,, xviii.
,,	4820	Ref. ...	S.D.	,, ,, ,, xvi.
,,	4827	,, ...	S.D.	,, ,, ,, ,,
,,	4838	,, ...	S.D.	,, ,, ,, ,,
,,	4840	Ref. S.D.	...	,, ,, ,, ,,
18	5083	mag. 8·8	9·0	,, ,, ,, ,,
19	5318	9·6 mag.	9·0	,, ,, ,, xviii.
,,	5374	,, 3·7	9·7	,, ,, ,, ,,
,,	5519	40′·2	10′·2	,, ,, ,, xvi.
20	8h 5680	Ref. ...	S.D.	,, ,, ,, ,,
,,	5844	mag. 9·2	9·0	,, ,, ,, ,,
21	6170	,, 8·8	8·6	,, ,, ,, ,,
22	6245	Ref. S.D.	...	,, ,, ,, ,,
,,	6246	Ref. ...	S.D.	,, ,, ,, ,,
24	6855	mag. 8·0	7·8	,, ,, ,, ,,
,,	6890	Ref. S.D.	...	,, ,, ,, ,,
,,	6930	Same star as −23°, 8104.		,, ,, ,, xviii.
26	9h 7617	Does not exist.		,, ,, ,, ,,
27	7727	mag. 8·9	9·9	,, ,, ,, ,,
,,	,,	Ref. ...	S.D.	,, ,, ,, ,,
,,	7728	Ref. S.D.	...	,, ,, ,, ,,
28	10h 8296	mag. 7·4	7·2	,, ,, ,, ,,
29	8600	Ref. ...	S.D.	,, ,, ,, ,,
30	11h 8781	mag. 9·1	9·8	,, ,, ,, ,,
34	13h 9996	Ref. S.D.	...	,, ,, ,, ,,
36	14h 10665	,, S.D.	...	,, ,, ,, ,,
,,	10673	Ref. ...	S.D.	,, ,, ,, ,,
37	15h 10909	Ref. S.D.	...	,, ,, ,, ,,
,,	10911	Ref. ...	S.D.	,, ,, ,, ,,
,,	10973A	...	17m 2ˢ—27′·8	This is RS Libræ. Variable. C.R., vol. xv.
38	11136	57ˢ·0	60ˢ·0—S.D.	Cordoba Results, vol. xviii.
39	16h 11373	Dpl.	11373	,, ,, ,, ,,
41	17h 11967	23ˢ·6	20ˢ·6	,, ,, ,, xvi.
43	12785	8·9 mag.	9·9	A.N. 3784.

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ERRATA VI.—THOME'S CORDOBA DURCHMUSTERUNG. = TH.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
		ZONE 22°—*continued.*		
44	18h 13043	7s·6	7s·0	Cordoba Results, vol. xvi.
45	13222	26s·4	56s·4	,, ,, ,, ,,
47	19h 13714	Same star as —23°, 15160		Kapteyn :—S.D. has but one star here. A.N. 3784.
,,	13843	mag. 5·9	8·9	Cordoba Results, vol. xvi.
49	14424	22s·0	23s·8	,, ,, ,, ,,
50	20h 14639	24s·9	34s·9	,, ,, ,, xviii.
		ZONE—23°		
57	0h 139	50′·3	59′·3	Cordoba Results, vol. xviii.
63	4h 2075	35′·1	34′·1	,, ,, ,, ,,
,,	2087	mag. 9·1	9·9	,, ,, ,, ,,
67	5h 3316	8·3—S.D.	9·9 ...	,, ,, ,, ,,
69	6h 3812	Ref. ...	G.C.	,, ,, ,, ,,
76	7h 5827	13s·9	8s·9	,, ,, ,, ,,
,,	5830	17s·2	15s·2	,, ,, ,, ,,
77	6076	Ref. ...	G.C.	,, ,, ,, ,,
,,	6077	Ref. G.C.	...	,, ,, ,, ,,
,,	6081	,, ...	Z.C.	,, ,, ,, ,,
,,	6082	Ref. Z.C.	...	,, ,, ,, xvii.
,,	6096	36′·2	39′·2	,, ,, ,, xviii.
,,	6102	Ref. ...	G.C.	,, ,, ,, ,,
78	6634	mag. 9·0	9·9	,, ,, ,, ,,
99	16h 12889	Ref. ...	G.C.	,, ,, ,, ,,
100	13035	Ref. G.C.	Z.C.	,, ,, ,, ,,
102	17h 13830	mag. 18	10	
107	19h 15160	Identical with —22°, 13714.		Kapteyn. See also A.N. 3784.
,,	15307	mag. 7·7	7·9	
108	15386	37·8	27·8?	
,,	15416	mag. 9·0	9·6	Cordoba Results, vol. xviii.
113	21h 17109	28′·6	18′·6	
117	23h	19001–19038	18001–18038	Cordoba Results, vol. xv.
		ZONE—24°		
118	0h 156	50′·0	53′·9	Kapteyn :—Looked up on plates. Dec. of C.P.D. correct. No star in Thome's position.
124	3h 1932	mag. 9·0	9·7	Cordoba Results, vol. xviii.
,,	2192	,, 8·7	9·7	,, ,, ,, ,,
125	4h 2355	,, 9·5	9·9	,, ,, ,, ,,
128	5h 3256	,, 9·0	9·9	,, ,, ,, ,,
129	3478	,, 19	10?	Kapteyn.
130	6h 3729	Delete	= —23°, 3471	A.N. 3784.
,,	3886	mag. 8·6	9·6	Cordoba Results, vol. xviii.
131	4012	,, 10	9·8	,, ,, ,, ,,
,,	4062	,, 6·3	9·3	,, ,, ,, ,,
132	4514	4′·6	40′·6	,, ,, ,, ,,
,,	4578½	...	mag. 9·5 R.A. 33s·2 Dec. 0′·2	,, ,, ,, ,, Cape :—Variable.
133	4686	70′·3	20′·3	
,,	4819	Ref. Z.C.	...?	Kapteyn :—There is but one star here in Z.C. One reference, most probably the former, must therefore be omitted. Omit former (Ristenpart).
,,	4820	do.	...	
135	7h 5228	Ref. Z.C.	O.A.	Kapteyn.
,,	5354	42s·6	52s·6	
137	5867	..	Dpl. 5867	Cordoba Results, vol. xviii.
,,	5870	Ref. Z.C.	G.C.	Kapteyn.
,,	6100	Ref. ...	,,	

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ERRATA VI.—THOME'S CORDOBA DURCHMUSTERUNG. = TH.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
			ZONE—24°—*continued.*	
140	8^h 6716	...	Dpl. 6716	Cordoba Results, vol. xviii.
142	7543	...	„ 7543	„ „ „ „
145	9^h 8227	mag. 8·9	9·9	„ „ „ „
„	8413	„ 8·8	9·8	„ „ „ „ (Var.)?
150	9976	„ 9·0	10	A.N. 3784.
152	12^h 10516	Ref. Z.C.	...	Cordoba Results, vol. xviii.
153	13^h 10759	9·0	9·9	„ „ „ „
„	10766	Ref. ...	O.A.	„ „ „ „
„	10769	Ref. O.A.	...	„ „ „ „
154	11107	mag. 9·0	9·9	„ „ „ „
155	14^h 11287	Ref. O.A.	...	„ „ „ „
160	16^h 12791	mag. 10	9·5	„ „ „ „
„	12792	Ref. Z.C.	O.A.	„ „ „ „
161	13016	mag. 8·4	9·8	„ „ „ „
„	13057½	...	mag. 9·5	
„	„	...	A.R. $14^s{\cdot}0$	„ „ „ „
„	„	...	Dec. 6′·8	
163	13766	Ref. G.C.	...	Kapteyn.
„	13767	Ref. ...	G.C.	„
„	13769	$26^s{\cdot}9$	$16^s{\cdot}9$?	„
„	13770	$13^s{\cdot}1$	$23^s{\cdot}1$?	„
„	13772	14′·9	24′·9	„ and A.N. 3784.
„	13835	Ref. Z.C.	...	Cordoba Results, vol. xviii.
„	13843	Ref. ...	Z.C.	Kapteyn.
165	18^h 14218	Ref. G.C.	...	„
„	14219	Ref. ...	G.C.	„
„	14361	„	G.C.	„
„	14442	Ref. Z.C.	...	„
„	14443	Ref. ...	Z.C.	„
166	14516	mag. 10	Neb.	Cordoba Results, vol. xvi.
167	19^h 15070	Ref. Z.C.	...	„ „ „ xviii.
168	15285	29′·5	27′·5	„ „ „ „
„	15365	mag. 9·0	9·9	„ „ „ „
169	15490	Ref. ...	G.C.	Kapteyn.
171	20^h 16056	„	G.C.	„
173	21^h 16622	„	G.C.	Cordoba Results, vol. xviii.
„	16626	Ref. G C.	Z.C.	„ „ „ „
„	16761	mag. 6·5	9·5	
„	16781	„ 6·7	9·7	
„	16874	Ref. ...	Z.C.	Cordoba Results, vol. xviii.
„	16877	Ref. Z.C.	...	„ „ „ „
174	16917	mag. 6·7	9·7	„ „ „ xvii.
„	16959	Ref. ...	G.C.	„ „ „ xviii.
„	16960	Ref. G.C.	...	„ „ „ „
175		17107–17400	17201–17500	„ „ „ xvi.
			ZONE—25°	
179	1^h 524	mag. 7·0	7·7	Cordoba Results, vol. xvi.
180	688	„ 6·0	9·0	„ „ „ xv.
„	784	„ 9·1	9·4	„ „ „ xviii.
182	2^h 1241	„ 7·9	8·9	„ „ „ xvi.
„	3^h 1340	$8^s{\cdot}7$	$19^s{\cdot}7$	Kapteyn and A.N. 3784.
184	4^h 1766	Ref. Z.C.	O.A.	Cordoba Results, vol. xv.
„	1820	16′·4	26′·3	Kapteyn:—Looked up on plates. Dec. of C.P.D. correct. No star in Thome's place.
192	7^h 4446	mag. 9·2	8·7	Cordoba Results, vol. xviii.

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ERRATA VI.—THOME'S CORDOBA DURCHMUSTERUNG. = Th.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
			ZONE—25°—*continued.*	
192	7h 4447	mag. 9·7	8·9	Cordoba Results, vol. xviii.
193	4466½	...	mag. 9·7	
,,	,,	...	R.A. 51s·0	,, ,, ,, ,, Variable?
,,	,,	...	Dec. 16′·7	
,,	4651	Ref. Z.C.	...	,, ,, ,, ,,
,,	4652	Ref. ...	Z.C.	,, ,, ,, ,,
195	5158	Ref. G.C.	Z.C.	
,,	,,	...	Dpl. 5158	,, ,, ,, ,,
197	8h 5766	...	,, 5766	,, ,, ,, ,, (corrected.)
,,	5797	...	Ref. O.A.	,, ,, ,, xvi.
206	11h 8632	mag. 6·9	9·9	,, ,, ,, xviii.
215	15h 11148	8′·1	18′·2	Kapteyn:—Looked up on plates. Dec. of C.P.D. correct. No star in Thome's place.
218		Color 12071	11207	Cordoba Results, vol. xv.
219	17h 12299	mag. 9·0	9·7	,, ,, ,, xviii.
,,	12470	Ref. ...	Z.C.	Kapteyn:—In Z.C. misprinted 27° hence omission.
220	12601	Does not exist.		Cordoba Results, vol. xv.
221	18h 13024	Ref. G.C.	...	,, ,, ,, xviii.
,,	13025	Ref. ...	G.C.	,, ,, ,, ,,
227	20h 14767	,,	G.C.	Kapteyn.
228	15231	38′·8	8′·8	Cordoba Results, vol. xv.
230	21h 15714	Ref. G.C.	Z.C.	,, ,, ,, xviii.
232	23h 16292	mag. 9·2	9·9	,, ,, ,, xv.
			ZONE—26°	
246	6h 3646	mag. 9·6	6·6	Kapteyn:—G. also gives 6·6.
248	7h 4083	,, 19	10?	,, C.P.D. = 9·8.
,,		...	Color 4074	Cordoba Results, vol. xvi.
,,	4185	32s·8	32s·3	,, ,, ,, ,,
249	4372	mag. 12	10	,, ,, ,, ,,
253	8h 5778	26′·0	20′·0	,, ,, ,, ,,
254	5961	Ref. Z.C.	...	,, ,, ,, ,,
,,	5962	,, ...	Z.C.	,, ,, ,, ,,
256	9h 6731	,, ...	Z.C.	Kapteyn.
,,	6732	,, ...	Z.C.	,,
,,	6736	,, ...	Z.C.	,,
257	6838	,, ...	G.C.	,, Omission due to correction of G. by −1m.
,,	6970	mag. 9·0	10	A. N. 3784.
,,	7037	Ref. ...	Z.C.	Kapteyn.
258	7131	Same star as −27°, 6667.		
260	10h 7706	mag. 8·8	9·8	Cordoba Results, vol. xv.
262	8311	Ref. ...	G.C.	Cordoba Results, vol. xviii.
,,	8342	,, ...	U.A.	Kapteyn.
263	8731	,, ...	Z.C.	Cordoba Results, vol. xvi.
265	9204	29s·5	32s·5	,, ,, ,, ,,
270	15h 10862	Ref. G.C.	Z.C.	,, ,, ,, xviii.
274	17h 12109	20′·2	[10′·6]	Kapteyn:—Looked up on plates. Dec. of C.P.D. right. No star in Thome's position.
277	18h 12915	mag. 9·0	9·7—Ref. O.A.	Cordoba Results, vol. xviii.
282	19h 14432	Z.C.	...	,, ,, ,, xv. The Z.C. obs. was Vesta.
			ZONE—27°	
295	3h 1449	58′·9	59′·7	Cordoba Results, vol. xvi.
299	5h 2611	Ref. ...	Z.C.	Kapteyn.
302	6h 3411	,, Z.C.	...	Cordoba Results, vol. xv.
,,	3412	,, ...	Z.C.	,, ,, ,, ,,
305	7h 4425	mag. 10	9·4	,, ,, ,, xviii.

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ERRATA VI.—THOME'S CORDOBA DURCHMUSTERUNG. = TH.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
			ZONE—27°—*continued.*	
307	7^h 4789	mag. 9·7	9·0	Cordoba Results, vol. xviii.
,,	4878	Ref. ...	G.C.	,, ,, ,, ,,
,,	4895	mag. 9·5	9·0	,, ,, ,, ,,
309	8^h 5589	,, 9·4	9·9	,, ,, ,, ,,
,,	,,	$44^s·5$—52′·1	$45^s·5$—52′·7	,, ,, ,, ,,
,,	5591	mag. 9·9—51′·7	9·7—50′·7 Ref. Z.C.	,, ,, ,, ,,
313	9^h 6667	Identical with −26°, 7131		,, ,, ,, xv. Delete.
315	10^h 7227	4′·6	3′·6	,, ,, ,, xviii.
317	11^h 7792	mag. 8·7	9·0	,, ,, ,, ,,
,,	7795	,, 8·8	9·3	,, ,, ,, ,,
,,	8011	51′·1	56′·1	,, ,, ,, xv.
325	15^h 10260	Ref. ...	Z.C.	,, ,, ,, xvi.
,,	10283	,,	Z.C.	,, ,, ,, ,,
,,	10321	mag. 9·8	10	,, ,, ,, ,,
327		Dpl.	Color	,, ,, ,, ,,
		Color	Dpl.	,, ,, ,, ,,
329	16^h 11432	Ref. ...	Z.C. (or O.A.)	Kapteyn.
,,	11608	,, ...	Z.C.	Cordoba Results, vol. xvi.
333	18^h 12682	Ref. G.C.	Z.C.	,, ,, ,, xviii.
339	20^h 14583	mag. 9·1	9·8	,, ,, ,, xv.
340	14681	,, 9·0	10	A.N. 3784.
343	21^h 15644	Ref. ...	G.C.	Kapteyn.
,,	15671	45′·8	17′·0	Cordoba Results, vol. xv.
			ZONE—28°	
349		Dpl. 820	819	Cordoba Results, vol. xvi.
,,		Color 986	987	,, ,, ,, ,,
351		Color 1456	1457	,, ,, ,, xvii.
352		Dpl. 1828	1829	,, ,, ,, ,,
,,		Color 1878	1879	,, ,, ,, ,,
,,	4^h 1751	28° 0′·0	29° 0′·2	Kapteyn:—Dec. of C.P.D. certainly correct. See also A.N. 3784.
,,	1792	46′·7	[37′·2]	Kapteyn:—Dec. of C.P.D. certainly correct. On plates no star in Thome's position. Looked for visually at Cape in 1897 on 5 nights. No star in Thome's place. Ristenpart:—36′·7.
354		Color 2400	2405	Cordoba Results, vol. xvi.
356	6^h 2955½	...	mag. 9·7 R.A. 6^h 18^m $24^s·6$ Dec. 28° 24′·0 Dpl.	Cordoba Results, vol. xv.
358		Dpl. 2515	3515	Cordoba Results, vol. xvi.
361	7^h 4592	...	Dpl. 4592	,, ,, ,, xviii.
363	4949	...	Dpl. 4949	,, ,, ,, ,,
,,	5107	Ref. ...	Z.C.	,, ,, ,, xvi.
364	5335	,,	Z.C.	,, ,, ,, ,,
,,	5338	,,	Z.C.	,, ,, ,, ,,
,,	5341	,,	Z.C.	,, ,, ,, ,,
,,	5350	,,	Z.C.	,, ,, ,, ,,
,,	5362	,,	Z.C.	,, ,, ,, ,,
,,	5372	,,	Z.C.	,, ,, ,, ,,
,,	5381	,,	Z.C.	,, ,, ,, ,,
,,	5390	,,	Z.C.	,, ,, ,, ,,
,,	5391	,,	Z.C.	,, ,, ,, ,,
,,	5410	,,	Z.C.	,, ,, ,, ,,
,,	5431	,,	Z.C.	,, ,, ,, ,,

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ERRATA VI.—THOME'S CORDOBA DURCHMUSTERUNG. = TH.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
		ZONE—28°—*continued.*		
366	8h 5809	...	Dpl. 5809	Cordoba Results, vol. xviii.
367	6177	Ref. Z.C.	...	,, ,, ,, ,,
368	6607	Ref. G.C.	...	,, ,, ,, ,,
371	7560	Ref. ...	Z.C.	,, ,, ,, xvi.
,,	7562	,,	Z.C.	,, ,, ,, ,,
372	9h 7607	...	Dpl. 7607	,, ,, ,, ,,
373	10h 7946	...	Dpl. 7946	,, ,, ,, xv.
376	11h 9009	59'·1—Z.C.	58'·8...	,, ,, ,, xviii.
377	9233	0'·0	59'·9	,, ,, ,, xvi.
,,	9235	33'·9	33'·3	,, ,, ,, ,,
379		9780	9760	,, ,, ,, ,,
383	14h 10959	mag. 9·0	10	,, ,, ,, xviii.
385	15h 11520½	...	mag. 9·5 4s·2—12'·1	,, ,, ,, ,,
388	16h 12608	mag. 16	10	,, ,, ,, xvii.
392	17h 13854½	...	mag. 10' 4s·2—0'·6 Z.C.	,, ,, ,, xviii.
393	14166	47'·8	37'·8	,, ,, ,, xvi.
395	18h 14638	mag. 19	10	,, ,, ,, ,,
403	20h 17047	Ref. G.C.	Z.C.	,, ,, ,, xviii.
405	21h 17523	32'·0	22'·0	,, ,, ,, xv.
		ZONE—29°		
412	3h 1209	mag. 9·1	10	Cordoba Results, vol. xviii.
416	5h 2248	,, 9·5	10	,, ,, ,, xvii.
,,		Dpl. 2217	2211	,, ,, ,, xvi.
420	6h 3464	Ref. ...	Z.C.	,, ,, ,, xviii.
,,	3465	Ref. Z.C.	G.C.	,, ,, ,, ,,
423	7h 4444	...	Dpl. 4444	,, ,, ,, xv.
424	4771	...	Dpl. 4771	,, ,, ,, xviii.
432	9h 7194	...	Dpl. 7194	,, ,, ,, ,,
435	10h 8081	mag. 8·5	8·9	,, ,, ,, ,,
437	8762	,, 8·9	9·3	,, ,, ,, ,,
439	11h 9239	32s·3	42s·3	,, ,, ,, ,,
,,	9250	0'·3	0'·6—Z.C.	,, ,, ,, ,,
451	16h 12791	3'	3'·4	,, ,, ,, xvii.
452	17h 13226	...	Color 13226	,, ,, ,, ,,
457		Color 14721	14714	,, ,, ,, ,,
461	2nd col.	18h	19h	,, ,, ,, ,,
465	20h 16931	mag. 9·0	9·9	,, ,, ,, xviii. A.N. 3784.
466	17246	,, 8·9	8·6	,, ,, ,, ,,
471	23h 18877	,, 9·1	8·8	,, ,, ,, ,,
		ZONE—30°		
475	2h 816	Ref. G.C.	...	Cordoba Results, vol. xv.
476	3h 1292	mag. 8·9	9·8	,, ,, ,, ,,
484	6h 3714	29'·4	19'·4	,, ,, ,, ,,
,,	3715	mag. 9·4	9·2	,, ,, ,, xviii.
,,	3725	28'·9	18'·9	,, ,, ,, ,,
,,	3732	Delete	=3736	Cordoba to Ristenpart.
489	7h 5275	...	Dpl. 5275	Cordoba Results, vol. xviii.
,,	5286	mag. 10	9·4	,, ,, ,, ,,
493	8h 6270	...	Dpl. 6270	,, ,, ,, ,,
,,	6386	mag. 010	10	,, ,, ,, xvii.
494	6601	,, 9·3	9·0	,, ,, ,, xviii.
,,	6620	,, 9·8	9·5	,, ,, ,, ,,

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ERRATA VI.—THOME'S CORDOBA DURCHMUSTERUNG. = TH.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
		ZONE—30°—*continued.*		
494	8^h 6640	mag. 8·5	8·9	Cordoba Results, vol. xviii.
497	9^h 7621	,, 19	10	,, ,, ,, xvii.
500	10^h 8440	,, 8·4	9·0	
507	13^h 10592	,, 9·2	9·7	Cordoba Results, vol. xviii.
508	10791	Does not exist.		,, ,, ,, ,,
509	11067	mag. 9·0	10	,, ,, ,, ,,
517	16^h 13504	53^s·9	43^s·9	,, ,, ,, xv.
532	17945	mag. 9·0	9·6	Ristenpart.
535	4th col.	21^h	21^h–22^h	Kapteyn.
,,	5th ,,	21^h—22^h	22^h	,,
536	22^h 19392	mag. 9·5	9·0	Cordoba Results, vol. xviii.
		ZONE—31°		
543	3^h 1538	40^m	41^m	Cordoba Results, vol. xv. (The same minute applies to 1539–41:—Ristenpart.)
544	1585	47^m	48^m	Cordoba Results, vol. xv.
,,	1586	47^m	48^m	,, ,, ,, ,,
,,	1587	48^m	49^m	,, ,, ,, ,,
,,	1588	48^m	49^m	,, ,, ,, ,,
,,	1589	48^m	49^m	,, ,, ,, ,,
547	5^h 2521	17′·5	7′·5	See also No. 55, p. 42A. *ante.*
,,	2732	mag. 9·0	9·7	
548	2918	...	Dpl. 2918	Cordoba Results, vol. xviii.
549	6^h 3136	30′·1	31′·5	,, ,, ,, ,,
551	3720	Ref. ...	G.C.	Kapteyn.
,,	3781	mag. 6·3	6·9	
552	4207	1′·7	12′·7	A.N. 3784.
553	7^h 4265	Variable.		Cordoba Results, vol. xviii.
,,	4269½	...	mag. 10 32^s— 3′	,, ,, ,, ,,
,,	4466	mag. 9·5	9·0	,, ,, ,, ,,
,,	4467	,, 9·3	8·3	,, ,, ,, ,,
558	8^h 5840	...	Dpl. 5840	,, ,, ,, ,,
561	6796	mag. 9·2	9·7	,, ,, ,, ,,
562	9^h 7158	,, 9·0	10	,, ,, ,, ,,
563	7470	Ref. ...	Z.C.	,, ,, ,, ,,
,,	7471	,, Z.C.	...	,, ,, ,, ,,
564	7848	mag. 9·4	9·6	,, ,, ,, ,,
,,	7850	35′·4	55′·4	,, ,, ,, ,, See No. 108, p. 46A. *ante.*
567	10^h 8532	24′·1	22′·1	Cordoba Results, vol. xviii.
568	11^h 8978	mag. 9·7	9·1	,, ,, ,, ,,
569	9340	37′·9	47′·9	,, ,, ,, ,, Same as No. 9339.
572	12^h 10048	mag. 9·7	10	,, ,, ,, ,,
573	13^h 10459	1′·5	61′·5	,, ,, ,, ,, Same as —32°, 9446.
574	10771	Ref. ...	Z.C.	,, ,, ,, xvi.
578	15^h 11996	mag. 9·1	10	,, ,, ,, xviii.
581	16^h 12715	,, 6·7	10	Seen $6·7^m$ on 1888, May 5. See No. 219, p. 51A. *ante.*
,,	12818	Does not exist.		Cordoba Results, vol. xviii.
589	18^h 15135	mag. 9·2	8·7	,, ,, ,, ,,
592	16121	4^s·4	8^s·4	,, ,, ,, ,,
,,	16250	20′·5	30′·5	,, ,, ,, xvi.
596	19^h 17207	48^s·8	45^s·8	,, ,, ,, xviii.
,,	20^h 17325	0^s·7	3^s·7	,, ,, ,, ,,
,,	17327	Does not exist.		,, ,, ,, ,,
597	17476	mag. 9·0	10	A.N. 3784.
598	17751	32^s·2	33^s·2	Cordoba Results, vol. xvi.

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ERRATA VI.—THOME'S CORDOBA DURCHMUSTERUNG. TH.—*continued*.

Page.	Star.	For	Read.	Authority, Remarks, etc.
		VOL. II.		
		ZONE—32°		
19	8^h 5301½	...	mag. 9·7	Cordoba Results, vol. xviii.
,,	,,	...	38^s—48′	
23	9^h 6722	Ref. ...	Z.C.	,, ,, ,, xv.
,,	6723	,, Z.C.	...	,, ,, ,, ,,
,,	6724	,, U.A.	...	,, ,, ,, ,,
,,	6725	,, ...	U.A.	,, ,, ,, ,,
,,	6729	,, Z.C.	...	,, ,, ,, ,,
,,	6730	,, ...	Z.C.	,, ,, ,, ,,
25	10^h 7202	,, ...	C.P.D.	
,,	7208	,, ...	C.P.D.	
30	12^h 8884½	...	mag. 8·7, 32^s·5 59′·8	A.N. 3784.
,,	8888	mag. 9·0	9·9	,, ,,
32	13^h 9446	,, 9·6	9·4	
,,	,,	39^s·6—2′·1	39^s·4—1′·9	
36	14^h 10486	Ref. ...	G.C.	
40	15^h 11665	22^s·2—1′·9	22^s·1—2′·1	C.—R.:— −31° No. 12818 included.
46	17^h 13544	Ref. ...	G.C.	
53	15574	mag. 9·0	9·9	A. N. 3784.
54		16861	15861	Cordoba Results, vol. xvii.
60		17808	17807	,, ,, ,, ,,
		ZONE—33°		
63	1^h 563	mag. 9·9	9·6	Cordoba Results, vol. xvii.
66	4^h 1655	1^s·6	12^s·1	A. N. 3784.
74	7^h 3930	44^s·7	52^s·5	,, ,,
76	8^h 4526	1^m 0^s·6	0^m 57^s·6	Cordoba Results, vol. xviii.
99	16^h 11633	Ref. Z.C.	...	,, ,, ,, ,,
101	17^h 12057	mag. 19	10	,, ,, ,, xvii.
103	12739	...	Dpl. 12739	,, ,, ,, xviii.
107	18^h 13828	44′·8	48′·4	,, ,, ,, xvii.
110	19^h 14654	mag. 9·0—44^s·2	9·7—51^s·2	,, ,, ,, xviii.
,,	14659	9^s·4	19^s·4	See p. 58A. *ante*, No. 73.
,,	14665	41′·2	41′·6	Cordoba Results, vol. xvii.
,,	14666	41′·6	41′·2	,, ,, ,, ,,
		ZONE—34°		
119	1^h 662	53′·7	[37′·7]	Invisible in printed positions on 1899, Feb. 4 and (in twilight) 1902, Apr. 13: on both occasions other 10^m stars were seen. (Cape 7-in.)
,,	669	51′·2	[36′·4]	
124	4^h 1904	24′·0	25′·0	Cordoba Results, vol. xviii.
127	6^h 2805	43′·6	44′·6	,, ,, ,, ,,
,,	2809	44′·7	33′·5	A.N. 3784.
,,	2836	mag. 7·9	9·9	Cordoba Results, vol. xviii.
129	7^h 3471	,, 9·7	9·0	,, ,, ,, ,,
,,	3610	,, 9·3	8·2	,, ,, ,, ,,
,,	3611	,, 8·3	8·0	,, ,, ,, ,,
132	8^h 4401	39^s·3	41^s·8	,, ,, ,, ,,
133	4842	...	Dpl. 4842	,, ,, ,, ,,

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ERRATA VI.—THOME'S CORDOBA DURCHMUSTERUNG. = TH.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
		ZONE—34°—*continued.*		
134	8h 5069	...	Dpl. 5069	Cordoba Results, vol. xviii.
135	5389	mag. 9·0	9·9	,, ,, ,, ,,
138	9h 6285	,, 9·0	9·9	,, ,, ,, ,,
139	Top of page.	−36°	−34°	
,,	10h 6419	Ref. ...	Z.C.	Cordoba Results, vol. xviii.
,,	6420	,, Z.C.	...	
143	11h 7832	mag. 9·6	9·5	
146	12h 8731	...	Dpl. 8731	Cordoba Results, vol. xviii.
147	9053	mag. 8·9	9·8	,, ,, ,, ,,
148	9362	Color 9364	Color 9362	,, ,, ,, ,,
156	17h 11506	Ref. Z.C.	...	,, ,, ,, ,,
157	11826	35′·4	26′·2	Kapteyn :—See Astrophysical Journal vii., p. 356. Looked up in plates. C.P.D. correct. No star in Thome's place.
158	12272	Ref. ...	Z.C.	Kapteyn.
161	18h 13062	6′·2	2′·6	Cordoba Results, vol. xviii.
164	19h 14095	mag. 9·7	9·0	,, ,, ,, ,,
165	20h 14475	52s·3—G.C.	48s·2	,, ,, ,, ,,
166	14685	mag. 9·0	10	,, ,, ,, ,,
167	14821	21′·3	11′·3	,, ,, ,, ,,
,,	21h 15091	...	Dpl. 15091	,, ,, ,, ,,
		ZONE—35°		
174	2h 806	40s·8	49s·0	Cordoba Results, vol. xviii.
176	3h 1155	mag. 9·0	10	,, ,, ,, ,,
181	6h 2805	,, 9·7	9·3	,, ,, ,, ,,
,,	2811	,, 9·9	9·5	,, ,, ,, ,,
,,	2812	,, 9·9	9·3	,, ,, ,, ,, Corrected.
184	7h 3727	...	Dpl. 3727	,, ,, ,, ,,
,,	3751	2′·0	12′·0	,, ,, ,, ,,
192	10h 6247	mag. 9·0	9·9	,, ,, ,, ,,
195	6922	Does not exist.		,, ,, ,, ,,
198	12h 7886	mag. 9·0	10	,, ,, ,, ,,
,,	7988	3′·5	8′·5	,, ,, ,, ,,
199	8119½	...	mag. 9·5	,, ,, ,, ,,
,,	,,	...	55s·0—53′·0	
,,	8299	9·5 mag., 49s·3, 58′·1	9·3, 49s·1, 57′·9	C.—R. :——36° No. 8206 included.
200	13h 8403	50s·5	55s·5	Ristenpart. (Corrected erratum from Cordoba Results, vol. xviii.).
,,	8478	15s·8	18s·8	Cordoba Results, vol. xviii.
,,	8485	17′·4	37′·4	,, ,, ,, ,, This correction is not intelligible.
,,	8487	mag. 9·3	10	Cordoba Results, vol. xviii.
202	9249	...	Dpl. 9249	,, ,, ,, ,,
206	15h 10191	47s·5—Z.C.	48s·5	,, ,, ,, ,,
,,	10236	Ref. G.C.	U.A.	,, ,, ,, xvii.
208	16h 10825	...	Dpl. 10825	,, ,, ,, xviii.
212	17h	−34°	−35°	Kapteyn.
218	19h 13927	mag. 9·7	9·8	Cordoba Results, vol. xvii.
,,	13928	,, 9·8	9·7	,, ,, ,, ,,
222	22h 15180	Ref. Z.C.	...	Kapteyn.
,,	15181	,, ...	Z.C.	,,
		ZONE—36°		
227	0h 251	39m	38m	Cordoba Results, vol. xviii.
,,	255	39m	...	,, ,, ,, ,, Corrected erratum.
228	1h 762	...	55m	,, ,, ,, xviii.

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Page.	Star.	For	Read.	Authority, Remarks, etc.
		ZONE—36°—*continued.*		
228	1h 764	55m	56m	Cordoba Results, vol. xviii.
,,	766	56m	...	,, ,, ,, ,,
237	7h 3391	59s·3—56′·2 ...	59s·8—56′·5 Ref. Z.C.	,, ,, ,, ,,
,,	3392	Does not exist.		,, ,, ,, ,,
,,	3425	0′·2	1′·7 Dpl. 3425	,, ,, ,, ,,
,,	3426	1′·7	0′·2	,, ,, ,, ,,
241	8h 4506	mag. 9·8	8·8	,, ,, ,, ,,
242	4774	,, 9·0	7·0	,, ,, ,, ,,
247	10h 6426	,, 3·5	8·5	,, ,, ,, ,,
249	11h 7001	10s·2	13s·3	Ristenpart (corrected erratum from Cordoba Results vol. xviii.).
,,	7106	Ref. ...	Z.C.	Cordoba Results, vol. xvii.
253	12h 8206	Does not exist.	Belongs to −35°, 8299	C.—R.
259	15h 10133	mag. 9·0	9·6	Cordoba Results, vol. xviii. (Corrected.)
263	16h 11341	...	neb.	,, ,, ,, ,,
266	17h 12189	...	Dpl. 12189	,, ,, ,, ,,
268	18h 12684	45s·8	45s·3	,, ,, ,, xvii.
274	20h 14513	mag. 9·2	8·7	,, ,, ,, xviii.
278	22h 15579	,, 9·0	10	,, ,, ,, ,,
,,	15693	Ref. G.C.	...	,, ,, ,, ,,
		ZONE—37°		
281	0h 358	53m	52m	Kapteyn :—R.A. of C.P.D. certainly correct.
283	2h	900	980	
288	6h 2578	Ref. Z.C.	...	
,,	2579	,, ...	Z.C.	
292	7h 3510	,, Z.C.	...	
,,	3511	,, ...	Z.C.	
293	3896	,, ...	G.C. (cluster)	Kapteyn.
295	8h 4588	59′·9	[0′·2]	,, Dec. of Th. 1° in error. Dec. of C.P.D. certainly correct.
301	9h 6249	38′·9	33′·9	
312	14h 9729	Does not exist.	...	A.N. 3784.
,,	9730	10 mag., 53s·0, 43′·9	9·3, 52s·9 43′·2	C.—R.
315	15h 10419 10421	mags. to be interchanged.	...	,,
323	18h 13027	...	neb.	G.C. 5937.
330	22h 15076	6·7m	9·7m	See also No. 301, p. 55A. *ante.*
		ZONE—38°		
341	6h 2697	α requires +10s	=2700	C.—R.
,,	2700	8·9 mag.—41′·0	8·7 mag.—40′·8	,, Included 2697 corrected.
343	7h 3299	mag. 8·5	10	A.N. 3784.
345	3874	40′·0	4′·0	Kapteyn :—Z.C. to which Th. makes reference confirms.
352	9h 5981	48s·2	[56s·0]	Kapteyn :—Th. − C.P.D. = − 7s·8. Looked up on plates. R.A. of this star as well as that of the fainter ones in the immediate vicinity right in C.P.D. In Thome's place no star on plates.
356	11h 7292	34′·8	31′·8	
367		Color 11561	10561	
369	16h 11180	mag. 9·0	10	A.N. 3784.
381	21h 14874	,, ,,	10	,, ,,
382	22h 14987	,, ,,	10	,, ,,

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ERRATA VI.—THOME'S CORDOBA DURCHMUSTERUNG. = TH.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
		ZONE—39°		
389	4^h 1426	Ref. Z.C.	...	Cordoba Results, vol. xvii.
,,	1427	,, ...	Z.C.	,, ,, ,, ,,
390	1665	$52^s{\cdot}8$	$52^s{\cdot}3$	,, ,, ,, ,,
391	5^h 1784	$30^s{\cdot}9$	$30^s{\cdot}4$	,, ,, ,, ,,
394	6^h 2808	Ref....	G.C.	,, ,, ,, xviii.
399	8^h 4395	,, ...	Z.C.	
418	15^h 9960	mag. 9·0	10	A.N. 3784.
429	19^h 13250	45′·6	25′·6	,, ,,
432	20^h 14114	29′·1	[24′·1]	Kapteyn:—C.P.D. = 24′·2.
		ZONE—40°		
438	2^h 728	...	...	Kapteyn:—Is the min. correct?
	729	...	...	
,,	730	$44^m\ 3^s{\cdot}2$	$45^m\ 13^s{\cdot}2$	,, C.—R.
,,	731–736	44^m	45^m	,, ,,
440	4^h 1310	19′·5	15′·9	Some such correction is indicated by the C.P.D. and the C. du. Ciel plates.
444	6^h 2588	mag. 9·4	9·5	Cordoba Results, vol. xvii.
,,	2589	,, 9·5	9·4	,, ,, ,, ,,
450	8^h 4278	G.C.	Z.C.	
460	12^h 7187	Ref. ...	Z.C.	Cordoba Results, vol. xvii.
,,	7188	Ref. Z.C.	...	,, ,, ,, ,,
470		Dpl. 10336	10326	,, ,, ,, ,,
482	20^h 13926	mag. 7·2	7·2	
483	21^h 14317	Ref. ...	G.C.	Kapteyn.
		ZONE—41°		
491	3^h 1134	Ref. ...	G.C.	
,,	6^h 2257	...	...	$9{\cdot}5^m$ in Th. Looked for 1902, Feb. 25 and Mar. 30. No star there (Cape 7-in.). Also invisible on 3 Carte du Ciel plates.
499	7^h 3465	Ref. Z.C.	...	Cordoba Results, vol. xvii.
,,	3466	,, ...	Z.C.	,, ,, ,, ,,
500		Color	Dpl.	,, ,, ,, ,,
513	13^h 7852	mag. 9·7	9·5	,, ,, ,, ,,
,,	7853	,, 9·5	9·7	,, ,, ,, ,,
,,	,,	5′·9	5′·7	,, ,, ,, ,,
520	15^h 9936	Does not exist.	Same as 9937	A.N. 3784.
527	17^h 11955	$27^s{\cdot}5$	$37^s{\cdot}5$	Cordoba Results, vol. xvii.
536	21^h 14686	Ref. G.C.	...	,, ,, ,, ,,
,,	14687	,, Z.C.	G.C.	,, ,, ,, ,,
,,	,,	$47^s{\cdot}0$	$49^s{\cdot}4$	,, ,, ,, ,,
		VOL. III.		
		ZONE—42°		
3	1^h 630–664	Four references.	Raise one line.	Cordoba:—Misplaced in printing.
,,	2^h 855	...	...	Not on 3 Carte du Ciel plates; there is a faint star 4′ S. *pr.* the position (Cape 7-in.).
4	column 3	3^h	2^h	
,,	3^h 1023	...	G.C.	Cordoba Results, vol. xviii.
,,	1024	G.C.	...	,, ,, ,, ,,
8	5^h 2204	mag. 16	10	,, ,, ,, ,,

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ERRATA VI.—THOME'S CORDOBA DURCHMUSTERUNG. =Th.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
		ZONE—42°—*continued.*		
10	6h 2614	mag. 10·7	10·0	Cordoba.
13	7h 3590	20′·1	21′·1	Cordoba Results, vol. xviii.
15	8h 4126	Ref. ...	G.C.	,, ,, ,, ,,
,,	4127	,, Z.C.	...	,, ,, ,, ,,
16	4611	,, ,,	G.C.	,, ,, ,, ,,
,,	Duplex	4569	4568	Authority uncertain.
,,	Color	4570	4569	
,,	,,	4578	4573	
,,	4687	19s·8	19s·9	Cordoba Results, vol. xviii.
26	12h 7643	Ref. ...	Z.C.	Ristenpart.
,,	7644	,, Z.C.	...	,,
		ZONE—43°		
63	5h 1885	...	Color	Cordoba Results, vol. xviii.
,,	1987	...	,,	
72	8h 4698	Ref. Z.C.	...	,, ,, ,, ,,
,,	4700	,, ...	Z.C.	,, ,, ,, ,,
78	10h 6605	mag. 9·9	10	,, ,, ,, ,,
84	13h	Color 8411	8418	,, ,, ,, ,,
87		Color	Dpl.	,, ,, ,, ,,
,,		Dpl.	Color	,, ,, ,, ,,
95	17h 11471	Ref. ...	G.C.	,, ,, ,, ,,
100	18h 13110	,, ...	U.A.	,, ,, ,, ,,
105		Dpl. 16636	14636	,, ,, ,, ,,
		ZONE—44°		
118	6h 2657	...	Dpl.	Cordoba Results, vol. xviii. (Corrected).
120	7h 3473	52′·3	53″·3	,, ,, ,, ,,
,,	,,	...	Dpl.	
121	3686	3s·8	6s·8	,, ,, ,, ,,
,,	3767	53s·2	50s·2	,, ,, ,, ,,
144	15h 10530	...	Color	,, ,, ,, ,,
151	18h 12728	mag. 9·3	9·8	,, ,, ,, ,,
155	20h 13760	Ref. Z.C.	G.C.	,, ,, ,, ,,
		ZONE—46°		
221	6h 2934	Ref. Z.C.	...	Cordoba Results, vol. xviii.
,,	2936	,, ...	Z.C.	,, ,, ,, ,,
227	8h 4562	10′·1	6′·1	,, ,, ,, ,,
286	12h 7399	mag. 9·7	9·9	,, ,, ,, ,,
,,	7400	,, 9·9	9·7	,, ,, ,, ,,
		ZONE—49°		
375		Color No. 4284	No. 4384	Cordoba Results, vol. xviii.
378		Dpl. ,, 5308	,, 5303	,, ,, ,, ,,
379	10h 5490	36s·5	56s·3	,, ,, ,, ,,
385	12h 7288	mag. 9·7	10	,, ,, ,, ,,
,,	7289	,, 10	9·7	,, ,, ,, ,,
390	14h 8679	Does not exist.	...	Revision of C.P.D.
,,	8685	Ref. Z.C.	G.C.	Cordoba.
391		Color	Dpl.	Cordoba Results, vol. xviii.

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ERRATA VI.—THOME'S CORDOBA DURCHMUSTERUNG = Th.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
		ZONE—51°		
459	3^h 871	25^m	35^m	Cordoba Results, vol. xviii.
472	10^h 4845	Ref. ...	Z.C.	,, ,, ,, ,,
,,	4846	,, Z.C.	,,	,, ,, ,, ,,
477		,, Dpl.	Color	,, ,, ,, ,,

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ERRATA VII.—BRITISH ASSOCIATION: LALANDE'S CATALOGUE, 1800. = l. (SOUTH OF − 19°)

Page.	Star.	For	Read.	Authority, Remarks, etc.
4	0^h 121	mag. 6.	8	Argelander.
,,	,,	$4^s{\cdot}65$—23′ 51″·0	$4^s{\cdot}66$—26′ 19″·7	,,
,,	133	$32^s{\cdot}04$—26′ 19″·7	$31^s{\cdot}87$—7′ 50″·3	,, mag. for 8, read 6.
,,	137	$34^s{\cdot}38$—7′ 50″·3	$34^s{\cdot}51$—23′ 51″·1	,,
5	178	4^m $36^s{\cdot}45$	3^m 35^s ±	Kapteyn:—Is = 137.
13	487	14^m $31^s{\cdot}48$	15^m $31^s{\cdot}47$	Argelander.
,,	518	$20^s{\cdot}57$—26′ 57″·8	$15^s{\cdot}18$—31′ 58″·4	,,
24	940	$53^s{\cdot}23$—14′ 10″·0	$53^s{\cdot}32$—36′...	,,
25	979	$12^s{\cdot}96$—37′ 23″·9	$12^s{\cdot}98$—43′ 25″·8	,,
30	1197	7′	6′	,,
37	1469	3′	4′	Kapteyn:—a agrees with C.P.D.
42	1645	111°—9″·9	110°—2″·4	,,
46	1823	$37^s{\cdot}26$	$36^s{\cdot}46$	Argelander.
,,	,,	115° 41′ 40″·7	112° 41′ 13″·9	,,
57	1^h 2273	$42^s{\cdot}89$—37″·6	$13^s{\cdot}76$—37″·7	,,
58	2288A	$7\frac{1}{2}^m$. α, 6^m 16^s ±	pd 115° 1′ 55″·0, 557	,, Same as 2290.
,,	2316	10′	9′	,,
63	2498	39″·1	37″·7	,,
60	2390	34′	33′	Kapteyn:—1875, l = 10′·9, a = 10′·1, C.P.D. = 10′·0. Therefore error in l and not p.m.
67	2671	24′ 40″·4	23′ 41″·3	Kapteyn:—a agrees with C.P.D. Schönfeld.
68	2697	$25^s{\cdot}13$	$24^s{\cdot}35$	Argelander.
,,	,,	116° 5′ 8″·2	113° 4′ 41″·2	,,
,,	2700	...	...	Kapteyn:— l− C.P.D. = − 0′·3. Lac, a and G shew that l is about 15″ in error, no appreciable p.m.
70	2785	21^m $36^s{\cdot}16$—39″·0	20^m 57^s±—40″·0	Argelander.
73	2888	$26^s{\cdot}75$	$57^s{\cdot}63$	,,
74	2930	$39^s{\cdot}41$—33′ 47″·7	$39^s{\cdot}35$—28′ 48″·5	,,
76	3006	115° 54′	116° 2′	Kapteyn:—t agrees with C.P.D. position.
80	3164	27′	22′	,, a ,, ,, ,, ,, . In l's position no star in C.P.D. nor in S.D.
81	3234	35^m $36^s{\cdot}30$—14″·5	36^m 46^s±—14″·6	Argelander.
85	3363	$50^s{\cdot}79$	$30^s{\cdot}44$	,,
90	3567	$48^s{\cdot}65$	$48^s{\cdot}59$	,,
,,	,,	116° 2′ 41″·6	115° 52′ 39″·3	,,
91	3617A	5^m, α, 47^m 18^s ±	pd 113° 30′ 55″·6, 391	,, Same as 3618.
92	3679	$30^s{\cdot}90$	$29^s{\cdot}3$	,,
,,	,,	114° 7′ 6″·2	112° 6′ 48″·2	,,
96	3813	41′ 14″·5	51′ 16″·2	,,
100	3974	$3^s{\cdot}08$	$2^s{\cdot}88$	,, rightly corrects the Z.D. by 30′ on p. 211 of Bonn vii., but on p. 215 the P.D. is printed wrongly.
104	2^h 4125	15′	16′	Kapteyn:—b agrees with C.P.D. therefore not p.m.
105	4162	$29^s{\cdot}17$—54′ 3″·0	$29^s{\cdot}08$—44′ 0″·5	Argelander.
106	4219	$17^s{\cdot}29$	$21^s{\cdot}29$	,,
107	4242	$50^s{\cdot}91$	$21^s{\cdot}78$	,,
109	4328	$34^s{\cdot}46$	$33^s{\cdot}46$	,,
111	4426	$22^s{\cdot}10$—16′45″·1	$22^s{\cdot}32$—43′ 49″·1	,,
112	4458	55′	54′	Kapteyn:—1875, l 34′·8, t 33′·7, C.P.D. 33′·7 therefore error and not p.m.
,,	4477	14^m $56^s{\cdot}65$	15^m $6^s{\cdot}65$	This is a northern star.
113	4514	$12^s{\cdot}91$, 111°, 43″·3	$13^s{\cdot}28$, 112°, 52″·3	Kapteyn:—In position of l no star in either C.P.D. or S.D. Schönfeld.

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ERRATA VII.—LALANDE'S CATALOGUE 1800 = 1—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
117	2^h 4654	...	...	Kapteyn :— 1875 h m s ° ′ ″ l 2 23 43·01 −27 49 11·7 b (1853) 42·17 49 0·0 W (1867) 42·15 49 0·6 G (1879) 42·11 49 0·8 C.P.D. 41·0 49 0 No p.m. but 1 very discordant. (The R.A. of the C.P.D. seems also somewhat discordant. A better accordance will result if a p.m. of $-0^s.014$ is applied to the R.A.'s; still the C.P.D. position will be about $1^{sec.}$ too small).
118	4683	...	...	Kapteyn :—Same star as 4685 with an error of about $1^s.5$ in R.A. π agrees with 4685.
121	4817	$28^s.77$—47′ 33″·0	$28^s.78$—48′ 33″·2	Argelander.
,,	4836	26^m—1″·6	25^m—2″·2	,,
124	4944	$45^s.87$	$23^s \pm$	,,
,,	4955	29^m $59^s.17$	30^m $9^s.17$	,,
,,	4959	1′	2′	Kapteyn :—a confirms C.P.D. Schönfeld.
128	5106	$46^s.40$—23′ 15″·2	$46^s.37$—18′ 14″·0	Argelander.
129	5128A	R.A. 35^m 46^s Dec.	−19° 25′ 35″·6, 560	,, Same as 5130.
133	5316	$51^s.69$—50′ 41″·5	$51^s.70$—51′ 41″·6	,,
135	5395	$30^s.99$	$35^s.49$	,,
141	5608	...	...	Northern star. Position erroneous.
,,	5638	52^m $36^s.28$	53^m 0^s	Argelander.
144	5749	$15^s.63$	$5^s.62$	,,
,,	,,	45″·0	44″·9	,,
148	3^h 5919	1^m $12^s.79$	0^m $43^s.82$	,,
152	6073	54′ 18″·3	55′ 18″·4	,,
182	7241	44^m $42^s.01$—38″·9	45^m 12^s—38″·8	,,
184	7337	...	...	Kapteyn :—l's R.A. requires + $3^s \pm$. a and G. agree with C.P.D.
192	7676	13′	12′	Kapteyn :—t and Rad. 1890 agree with C.P.D.
194	7748	$25^s.82$—6″·3	$54^s.86$—6″·4	Argelander.
196	4^h 7815A	7^m, a, 1^m $1^s \pm$	pd 109° 49′ 19″·5, 560	,, Same as 7815.
202	8043	$31^s.05$—30′ 15″·9	$31^s.06$—31′ 1″·0	,,
203	8097	$50^s.81$, 110° 18′ 34″·7	$50^s.84$, 119° 23′ 40″·4	,, Kapteyn points out that the R.A. is about 3^s too small as compared with b and C.P.D.
205	8174	29′ 53″·8	30′ 54″·1	Argelander.
214	8536	$2^s.558$	$2^s.461$	Kapteyn:—l's R.A. requires + 2 or + $3^{secs.}$ as is proved by a, G. and C.P.D.
215	8566A	7^m, a, 22^m $5^s \pm$	pd 113° 28′ 3″·4, 558	Argelander. Same as 8566.
,,	8592	22^m $50^s.41$	23^m $19^s.52$	,,
217	8680	...	...	Kapteyn :—p.m. = $-0^s.01$ − 0″·27 (Porter), but even so, l is 10″ discordant.
219	8738	27^m $39^s.74$	26^m $39^s.73$	Argelander.
,,	8754	28^m—3″·9	27^m—4″·0	,,
,,	8757	28^m	27^m	,,
220	8800	$35^s.29$—6′ 27″·4	$35^s.30$—11′ 28″·6	,,
225	8962	$40^s.70$	[$50^s.70$]	Kapteyn :—1875. l 45^s, a $54^s.5$, C.P.D. $55^s.0$ therefore error and not p.m.
228	9099	15″·4	[45″·4]	Kapteyn :—Same star as 9100. In G., a and C.P.D there is but one star here.
230	9167	$28^s.32$—17′ 10″·4	$28^s.42$—27′ 13·2	Argelander.
,,	9199	43′ 14″·9	42′ 44″·8	,,
238	9512	27′ 11″·0	22′ 10″·9	
242	9666	57^m $38^s.89$	58^m $5^s \pm$	Argelander.
244	9738	$38^s.03$	$30^s \pm$	,,
,,	9741	$42^s.46$—22′ 44″·0	$42^s.47$—23′ 14″·1	,,
248	5^h 9882	...	...	Kapteyn :—1875, l 5^h 9^m $30^s.09$, a $26^s.21$, G $26^s.63$. C.P.D. $26^s.6$, therefore error in l and not p.m.

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ERRATA VII.—LALANDE'S CATALOGUE 1800 = l.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
262	5^h 10466	$2^s.562$	$2^s.528 \pm$	Kapteyn.
265	10573	$25^s.62$—6′ 36″.5	$25^s.68$—12′ 35″.6	Argelander.
266	10634	51′	46′	Kapteyn :—a agrees with C.P.D. Schönfeld.
273	10900	21′	22′	,, ,, ,, ,, ,, ,,
285	11387	$5^s.78$—33′ 25″.3	$5^s.79$—34′ 25″.5	Argelander.
289	11522	$15^s.40$	$57^s.40$	,,
297	6^h 11863	$17^s.43$	$17^s.37$	,,
,,	,,	113° 1′ 44″.1	112° 51′ 42″.5	,,
303	12116	$18^s.65$	$18^s.30$	,,
,,	,,	112° 54′ 14″.4	111° 54′ 5″.3	,,
312	12453	20′	40′	,,
316	12632	$53^s.63$	$53^s.70$	,,
,,	12633	$53^s.73$	$56^s.73$	,,
,,	12638	24^m $56^s.79$	26^m $10^s.25$	,,
325	12973	15′ 1″.1	16′ 1″.3	,,
327	13079	$29^s.26$	$31^s.76$	,,
328	13081	$31^s.74$	$29^s.24$	,,
340	13565	...	...	Kapteyn :—R.A. of l about 5^s too small (see Cinc. Publ. 9 p. 93). Schönfeld.
341	13623	$2^s.539$	$2^s.585 \pm$	Kapteyn.
342	13664	$7^s.34$	$25^s.34$	,, Argelander corrects the R.A. by -42^s; the true correction is $+ 18^s$.
,,	,,	40″.0	57″.2	Argelander.
344	13748	$39^s.25$—53′ 40″.2	$39^s.24$—58′ 40″.8	,,
345	13773	...	...	Kapteyn :—1875, b 21° 50′ 23″.7, a 38″.3, C 38″.8; therefore l 15″ in error.
,,	13774	$16^s.65$—42′ 15″.0	$16^s.59$—32′ 13″.7	Argelander.
351	7^h 14018	$49^s.14$	$48^s.44$	,,
,,	,,	113° 29′ 8″.7	111° 28′ 50″.7	,,
358	14301	10^m $57^s.23$	11^m $3^s.23$	,,
363	14490	33′ 49″.0	35′ 49″.2	,,
366	14618	$15^s.44$	$15^s.45$	,,
,,	,,	26′ 26″.8	28′ 27″.0	,,
367	14659 A	$5\frac{1}{2}^m$,α,7^h 21^m 21^s: pd	122° 37′ 2″.4, 322	,,
368	14698	22^m	21^m	,,
370	14755	...	Is variable.	Is Z Puppis, see p. 49B. *ante.*
,,	14762	24^m $10^s.53$—59″.1	23^m $10^s.55$—58″.8	Argelander.
,,	14793	25^m—35″.3	24^m—35″.1	,,
371	14809	25^m—2″.8	24^m—2″.5	,,
,,	14830	26^m $0^s.12$	25^m $55^s.12$	,,
376	15024	$52^s.91$—48′	$50^s.91$—47′?	,,
377	15061	33^m—58″.3	34^m—58″.4	,,
,,	15066	34^m $5^s.96$—5″.2	35^m $5^s.95$—5″.4	,,
,,	15068	34^m $8^s.50$	33^m $39^s.41$	,,
382	15277	9″.4	24″.4	,, Paris, vol. ii. p. [2], says: this correction ought to be rejected, P.M. = $+0^s.02$ $-0''.27$.
384	15329	$43^s.54$	30^s—	Argelander.
386	15436	$34^s.67$	$35^s.01$	,,
,,	,,	114° 11′ 51″.7	115° 12′ 2″.9	,,
394	15760	$55^s.12$—47′ 53″.1	$55^s.07$—42′ 52″.4	,,
397	15849	56^m—44″.4	57^m—44″.7	,,
400	8^h 16000	0^m $35^s.12$—4″.7	1^m $4^s.86$—4″.8	,,
404	16147	$54^s.93$	$55^s.50$	,,
,,	,,	112° 21′ 14″.8	113° 21′ 23″.8	,,
405	16198	$13^s.86$—28″.3	$14^s.12$—27″.9	,,
,,	16199	$14^s.43$	$17^s.94$	,,
406	16202	6^m $18^s.17$—21″.9	7^m 1^s:—22″.1	,,
416	16605	$58^s.36$	$52^s.36$	,,
418	16712	$0^s.28$—51″.5	$28^s.16$—51″.4	,,
420	16776	$42^s.59$—50′ 17″.5	$42^s.56$—41′ 45″.6	,,
,,	16795	$23^s.87$—54′ 38″.2	$23^s.85$—50′ 17″.7	,,

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ERRATA VII.—LALANDE'S CATALOGUE 1800 = l.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
420	8^h 16799	$31^s.49$	$31^s.47$	Argelander.
,,	,,	$109°\ 0'\ 45''.8$	$108°\ 54'\ 38''.2$	,,
421	16813	$5^s.36$	$5^s.35$	,,
,,	,,	$111°\ 8'\ 12''.4$	$110°\ 8'\ 4''.9$	,,
,,	16818A	9^m, a, $23^m\ 11^s$: pd	$109°\ 0'\ 46''.0$, 282	,,
428	17091	$30^m\ 7^s.95—32''.8$	$29^m\ 39^s.20—32''.7$	,,
433	17298	46′	41′	Paris.
437	17447	$43^s.84$	$42^s.04$	Argelander.
439	17530	$44^s.85$	$44^s.84$	,,
,,	,,	$110°\ 1'\ 29''.6$	$109°\ 51'\ 28''.3$	,,
454	9^h 18127	$13''.9$	$43''.9$	,,
474	18941	77°	78°	
476	19034	$31^m\ 9^s.63—15''.6$	$32^m\ 9^s.64—15''.7$	Argelander.
477	19074	$32^m\ 26^s.91—17''.6$	$35^m\ 26^s.92—18''.1$	,,
480	19174	$1^s.24—30'\ 37''.6$	$1^s.25—25'\ 36''.8$	,,
498	10^h 19920	50′	49′	Paris and Kapteyn.
505	20163	13^m	12^m	Paris.
525	20981	pd requires +10″	...	Kapteyn:—P.M. = +0″.12 as well.
528	21111	$38^s.72$	$39^s.23$	Argelander.
,,	,,	$105°\ 58'\ 10''.0$	$109°\ 58'\ 40''.5$	,,
530	21194	$44'\ 47''.5$	$45'\ 2''.5 \pm$	Kapteyn:—π indicates this correction. P.M. in δ (Auwers' Bradley) = −0″.12.
536	11^h 21426	$50^s.31$	$50^s.36$	Argelander.
545	21774	$34'\ 40''.3$	$35'\ 10''.4$	Kapteyn:—This correction is indicated by a, C. and C.P.D. Schönfeld.
559	22338	$8^s.44—24'\ 39''.6$	$8^s.46—29'\ 40''.1$	Argelander.
560	22384	$3^s.95—43''.5$	$32^s.89—43''.6$	,,
569	22722	$59^s.32$	$59^s.30$	,,
,,	,,	$109°\ 2'\ 32''.2$	$108°\ 55'\ 31''.5$	,,
573	12^h 22882	$1^m\ 51^s.30$	$2^m\ 1^s.30$	,,
577	23041	$55^s.48$	$55^s.09$	,,
,,	,,	$110°\ 35'\ 55''.0$	$109°\ 43'\ 48''.6$	,,
591	23633	$28^m\ 53^s.29—8''.7$	$29^m\ 23^s.08—8''.8$	,,
597	23856	$44^s.35—47'\ 15''.4$	$44^s.30—42'\ 14''.4$	,,
603	24082	...	...	Kapteyn:—l's R.A. requires about $+3^s$ or 4^s, a, C. and C.P.D. agree.
606	24207	$19^s.56—15'\ 42''.0$	$19^s.60—20'\ 42''.6$	Argelander.
608	24286A	8^m, a, $53^m\ 12^s$: pd	113° 26′ 34″.4, 565	,,
619	13^h 24757	$48^s.98—11''.6$	$18^s.98—11''.7$	,,
626	25010	21″.0	[51″.0]	Kapteyn:—π 1800 has 49″.0.
628	25120	$25^m\ 8^s.34—35''.1$	$24^m\ 39^s.21—35''.2$	Argelander.
644	25736	...	...	Kapteyn:—1875, l − 26°49′.0, π 49′.4, C.P.D. 49′.5 there l about 24″ wrong. 25737 also wrong.
647	25862	...	...	Kapteyn:—Dec. requires about +20″. P.M. in dec. = 0″.17 (Auwers' Bradley).
657	14^h 26248	24″.7	[11″.7]	Kapteyn:—Same star as 26247.
,,	26261	...	...	,, P.M. = − 0s.02 − 0″.30. There is besides an error of 15″ in l's dec. (see Porter).
660	26395	$6^s.15—49'32''.6$	$6^s.11—39'\ 31''.3$	Argelander.
662	26447	$12^s.42—32'$	$22^s.42—33'$	Kapteyn:—Argelander has pointed out the error in R.A.
663	26501	...	...	Kapetyn:—Place discordant. (Being reobserved with Cape T.C.).
666	26629	$26^m\ 20^s.49—57''.7$	$28^m\ 3^s. \pm —57''.8$	Argelander.
,,	26633	$26^s.80—9''.6$	$36^s.80—9''.4$	,,
667	26642	26^m	27^m	,,
668	26711	$42'\ 57''.9$	$44'\ 58'.0$	,,
670	26788	$25^s.55$	$25^s.59$	,,
,,	,,	$10'\ 45''.5$	13′	,,
674	26950A	$5\frac{1}{2}^m$, a, $37^m\ 47^s$: pd	113° 24′ 34″.0, 472	,,
678	27082	$22^s.34—11'\ 53''.4$	$22^s.32—8'\ 52''.9$	,,

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ERRATA VII.—LALANDE'S CATALOGUE 1800 =1 .—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
690	14^h 27563	$13^s.08$—6′ 33″.8	$13^s.13$—12′ 34″.6	Argelander.
699	15^h 27956	10^m $26^s.71$—38″.9	9^m $57^s.85$—39″.0	,,
713	28512	$59^s.41$—19″.9	$29^s.48$—20″.0	,,
719	28725	$53^s.33$—45′ 55″.1	$53^s.30$—35′ 54″.0	,,
728	29117	50^m $19^s.58$—33″.7	51^m $56^s\pm$—33″.5	,,
729	29156	$31^s.06$	$31^s.16$	,,
736	29425	$1^s.18$—38′ 36″.2	$1^s.20$—39′36″.3	,,
737	29449	...	...	Kapteyn :—1875, l = −25° 32′.5, a 33′.2, C.P.D. 33″.2 ; therefore error in l and not p.m.
,,	16^h 29456	111° 57′ 40″.4	112° 0′ 40″.5	Argelander.
,,	29460	$12^s.18$—37′ 48″.1	$12^s.22$—42′48″.8	,,
738	29518	15′	14′	Paris.
742	29667	47′	46′	Kapteyn :—b agrees with C.P.D.
745	29770	$56^s.75$	$55^s.98$?	Argelander.
,,	,,	113° 43′ 2″.5	112° 37′ 52″.6?	,,
746	29826	13^m $0^s.65$	12^m $30^s.93$	,,
750	29967	$8\frac{1}{2}^m$, a, 17^m 52^s : pd	114° 41′ 40″.7, 565	,,
757	30276	1′	0′	,,
758	30301	$20^s.86$	$12^s.86$	,,
760	30379	$43^s.78$	$53^s.78$	,,
,,	30381	$50^s.03$—23′ 15″.2	$50^s.01$—18′ 14″.5	,,
,,	,, A	7^m, a 31^m 53^s : pd	117° 3′ 52″.1, 567	,,
766	30614	$36^s.62$—27′ 53″.8	$36^s.50$—17′ 52″.2	,,
,,	30627	0″.8	15″.7 ?	,,
768	30711	$25^s.63$—37′ 37″.7	$25^s.60$—32′ 37″.2	,,
,,	30720	8″.0	[2″.0]	Northern star.
778	31092	$3^s.486$	$3^s.510$	Kapteyn.
780	31176	$30^s.20$	$30^s.37$	Argelander.
,,	,,	108° 9′ 57″.7	109° 10′ 4″.2	,,
,,	31200	$+3^s.606$	$+3^s.554$	Cape :—Also noted by Kapteyn.
787	17^h 31464	8^m $55^s.32$	9^m $1^s.62$	Argelander.
788	31508	43′	44′	,,
796	31813	−0.579	−0.717	
799	31955	$52^s.28$—9′ 8″.3	$52^s.25$—4′ 7″.3	Argelander.
802	32046	..	...	Kapteyn :—l 1875, = −23° 19′.0, a 18′.5, C.P.D. 18′.5 ; therefore error in l and not p.m.
,,	32057	$59^s.47$—31′ 41″.3	$59^s.41$—26′ 40″.6	Argelander.
809	32344	$32^s.15$—47′ 23″.7	$32^s.20$—52′ 25″.4	,,
810	32369	$16^s.82$	$11^s.82$	Paris. Also noted by Kapteyn.
821	32824	46^m $15^s.64$—54″.3	45^m $20^s.64$—54″.2	Argelander.
823	32915	$43^s.57$	$37^s.57$	,,
825	32963	$5^s.25$—10′ 9″.2	$5^s.23$—5′ 8″.8	,,
826	33013A	$8\frac{1}{2}^m$, a, 51^m $11^s.14$	pd 112° 52′ 13″.8, 173	,,
,,	33058A	$8\frac{1}{2}^m$, a, 52^m $9^s.85$	pd 114° 23′, 566	,,
827	33068	$32^s.16$	$26^s\pm$	,,
833	33305	$41^s.45$—37′ 8″.9	$41^s.52$—47′ 11″.5	,,
837	18^h 33451	2^m—43″.3	1^m—43″.7	,,
,,	33470	2^m—30″.6	1^m—31″.0	,,
838	33513	4^m—29″.1	3^m—29″.5	,,
839	33525	4^m—16″.9	3^m—17″.3	,,
,,	33540	4^m—26″.7	3^m—″27.1	,,
841	33608A	7^m, a, 6^m 19^s : pd	115° 39′ 48″.1, 567	,,
846	33830	$42^s.53$—21′ 58″.5	$42^s.62$—32′ 0″.7	,,
860	34399	$45^s.86$	$46^s.07$	,,
,,	,,	109° 27′ 37″.2	110° 27′ 44″.7	,,
868	34697	32^m $52^s.22$—25″.0	33^m $21^s.98$—24″.8	,,
873	34915	$46^s.81$	$47^s.39$	Argelander.
,,	,,	109° 31′ 12″.5	110° 32′ 20″.3	,,
876	35018	$54^s.14$—24′ 55″.5	$54^s.20$—35′ 59″.0	,,
880	35188	43^m $44^s.18$—4″.0	44^m $13^s.15$—4″.6	,,
881	35235	...	...	Kapteyn:—a and G. indicate that l's dec. requires about +15″.

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ERRATA VII.—LALANDE'S CATALOGUE 1800 = L—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
895	18^h 35773	mag. 9	$6\frac{1}{2}$	Argelander.
,,	,,	$15^s.36$—54′ 2″.6	$15^s.38$—59′ 3″.2	,,
,,	35785	28′ 36″.7	29′ 36″.9	,,
900	19^h 35983	12′ 6″.7	11′ 51″.7?	,,
901	36005	$53^s.37$—21′ 6″.1	$53^s.34$—16′ 5″.4	,,
902	36065A	5^m, α, 3^m 16^s: pd	115° 35′ 9″.2, 567	,,
905	36191	$55^s.75$	$55^s.95$	,,
,,	36192	5^m $56^s.27$—23″.3	6^m $48^s.38$—32″.9	,,
906	36240	6^m $48^s.38$—57″.2	7^m 2^s—57″.1	,,
909	36330	$41^s.23$—23′ 6″.7	$41^s.58$—53′ 14″.0	,,
914	36533A	6^m, α, 13^m 6^s: pd 1	14° 52′ 53″.8, 566	,,
,,	36550A	α, 13^m 23^s: pd 114°	20′ 17″.6, 566	,,
919	36733	$24^s.60$—21′ 29″.9	$29^s.09$—22′ 40″.2	,,
920	36798	20′ 55″.1	21′ 10″.1	,,
922	36872	3″.0	18″.0	,, (and p.m. = 0″.76 Porter).
930	37165	26^m	27^m	,,
,,	37197	27^m $34^s.91$	28^m $4^s.90$	,,
933	37282	29^m $22^s.04$—32″.5	28^m $22^s.05$—32″.9	,,
935	37362	$5^s.86$	$6^s.60$	,,
,,	,,	109° 55′ 57″.9	111° 56′ 14″.8	,,
,,	37385	$41^s.02$—32′ 17″.8	$40^s.90$—22′ 15″.3	,,
936	37428	41′	43′	,,
946	37813	2 mag.	$7\frac{1}{2}$ mag.	,,
948	37919	$57^s.59$—41′ 8″.0	$57^s.61$—51′ 9″.8	,,
949	37959	46^m $0^s.65$—23″.9	47^m $0^s.64$—23″.4	,,
954	38121	$+2^s.581$	$+2^s.556$	Northern star.
957	38276	$11^s.63$—52′ 1″.8	$11^s.64$—51′ 54″.4	Argelander.
961	38413	$10^s.28$—10″.6	$39^s.07$—10″.5	,,
967	20^h 38654	$29^s.73$	$29^s.00$?	,,
,,	,,	113° 55′ 59″.8	112° 1′ 42″.2?	,,
,,	38673	$2^s.293$	$2^s.322$	,,
968	38692	$15^s.96$—46″.6	$46^s.61$—46″.5	,,
970	38782	$17^s.96$	$17^s.98$	,,
980	39167	$58^s.00$—24″.8	$28^s.40$—25″.7	,,
982	39259	pd requires	about +10″	Kapteyn:—1875, l −21° 12′ 41″, a 52″, C 54″, C.P.D. 60″±. (Being reobserved with Cape T.C.).
984	39352	17^m $22^s.04$—49″.4	16^m $15^s.77$—49″.3	Argelander.
986	39433	19^m $29^s.58$—1″.5	20^m $29^s.59$—1″.7	,,
,,	39435	19^m—29″.7	20^m—29″.8	,,
987	39448	19^m $53^s.73$—59″.7	20^m $23^s.84$—59″.5	,,
992	39652	$30^s.87$	$29^s.45$	,,
,,	,,	119° 13′ 51″.6	117° 13′ 14″.4	,,
994	39759	$1^s.15$.—28′ 50″.3	$1^s.13$—19′ 49″.3	,, and Kapteyn.
996	39824	...	...	Kapteyn:—There is an error of about 20″ in l's dec. For p.m. see Porter.
1012	40455	$3^s.208$	$3^s.205$	
1014	40524	...	...	Kapteyn:—The two numbers seem to belong to the same star. The dec. of the former requires −1′ and there is perhaps an error in the dec. of the latter as well.
,,	40525	...	...	
1030	21^h 41187	3^m $47^s.15$—20″.3	4^m $14^s.43$—20″.2	Argelander.
1031	41204	4^m $14^s.54$	3^m $47^s.24$	,,
,,	,,	52″.0	52″.1	,,
1034	41343	$3^s.265$	$3^s.282$	
1039	41534	23′	24′	Kapteyn:—π confirms C.P.D.
1041	41638	...	...	Kapteyn:—differs both in R.A. and Dec. from 41639 and 41640 which are the same star.
1046	41807	$8^s.66$	$8^s.61$	Argelander.
,,	,,	113° 0′ 41″.2	112° 52′ 40″.0	,,
1049	41924	23^m $3^s.78$	22^m $33^s.33$	,,

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ERRATA VII.—LALANDE'S CATALOGUE 1800 = l.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
1051	21^h 42032	.7″·3	[17″ ±]	Kapteyn :—1875 l 23″, m 35″, b 30″, C 34″.
1057	42261	5′	4′	Kapteyn :—a agrees with C.P.D.
1078	43092	$18^s·65-59''·2$	$18^s·15-59''·1$	Argelander.
,,	43094	$20^s·75-16'\ 30''·5$	$20^s·85-21'\ 31''·4$	,,
1079	43130	$26^s·33-54'\ 27''·3$	$26^s·22-44'\ 24''·9$	,,
,,	43130A	$8^m,\ 57^m\ 32^s$ ±,	$107°\ 30'\ 45''·3,\ 186$	,,
1080	43172	$28^s·80-24'\ 26''·7$	$28^s·79-25'\ 26''·9$	,,
1083	22^h 43281	$29^s·68$	44^s ±	,,
,,	43293	$17'\ 28''·3$	$18'\ 28''·2$	,,
1090	43587	$33^s·44-45'\ 37''·6$	$33^s·40-35'\ 36''·0$	,,
1092	43652	$32^s·57$	$46^s·69$	,,
,,	43663	$12^m\ 47^s·04-13''·8$	$13^m\ 15^s·04-13''·7$	,,
,,	43678	$13^m\ 14^s·59-57''·9$	$12^m\ 32^s·55-58''·0$	,,
1093	43700	34′	35′	,,
1094	43750	$15^m\ 0^s·10$	$14^m\ 55^s·80$	,,
1096	43812	$28^s·60-31'\ 22''·9$	$28^s·57-25'\ 48''·5$	,,
1102	44059	$22^s·43-42'\ 38''·7$	$22^s·38-37'\ 37''·9$	,,
1104	44134	$25^m\ 5^s·20$	$24^m\ 35^s·20$	,,
1107	44257	$35^s·43-38'\ 42''·1$	$35^s·51-48'\ 43''·9$	,,
1110	44400	$+3^s·333$	$+3^s·280$ ±	Kapteyn.
1122	44866	...	...	,, According to l 44867 and π, dec. 15″ in error. (Also p.m. Porter.)
1125	44964	...	...	Kapteyn :—There seems to be an error of 15″ in dec. (For p.m. see Porter.)
,,	45000	$34^s·42$	$35^s·88$	Argelander.
1128	45110	19′	[15′]	Kapteyn :—l, 1875, −26° 55′·3, a 51′·5, C.P.D. 51′·5.
1129	45138	$40^s·79-38'\ 41''·0$	$40^s·74-33'\ 40''·2$	Argelander.
1145	23^h 45789	$3^s·119$	$3^s·120$	
1153	46093	$3^s·054$	$3^s·058$	
1155	46187	35′	40′	Confirmed by Schönfeld.
1163	46510	$3^s·15-31'\ 5''·7$	$3^s·08-21'\ 3''·3$	Argelander.
1165	46588	$37^s·19-15''·4$	$27^s·18-15''·3$	,,
1167	46671	$26^s·83-31'\ 31''·3$	$26^s·78-26'\ 30''·0$	,,

Kapteyn has also called attention to differences between l and the C.P.D. which he shews are due to known proper motions (mostly from Porter). These cases are omitted as they are not errata.

The authority "Schönfeld" refers to a MS. preserved at the Bonn Observatory, placed at Dr Ristenpart's disposal by Professor Küstner.

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ERRATA VIII.—PARAMATTA CATALOGUE (BRISBANE) 1825 = p.

Some Errata North of −19° are included. See also C.P.D. Vol. III., pp. 71–72.

Page.	Star.	For	Read.	Authority, Remarks, etc.
8	1h 203	18m	13m	This star would appear to be Melb. 1, No. 89. (Precs. read as + 2s·3103 ± and + 19″·036 ±).
10	275	2s·866	3s·256	
,,	,,	73° 2′	106° 58′	
,,	290	+2·871	+3·371	
,,	,,	72° 35′	107° 25′	
15	2h 416	59°, 15″·7	58°, 14″·7	Kapteyn and Ristenpart.
16	470	...	...	,, p. − C.P.D. = − 33s. Therefore correction of + 30s as pointed out in footnote in p. pretty certain.
,,	471	58m	55m	Same star as 463.
19	3h 546	63°, 16″·6	62°, 15″·6	Kapteyn.
21	611	No star.	...	Search at Cape.
23	669	17′	18′	Stone.
32	5h 950	14′	13′	Kapteyn :—Star identical with 951.
35	1022A	See 7385.	p. 247	
36	1058	44m	43m	Kapteyn :—See also footnote in S.
41	6h 1200	11m	10m	
,,	1211a	48s·94	43s·94	Same as 1210. Ristenpart.
,,	,, δ	53′	52′	,, ,, 1212. ,,
42	1223	27′ 30″·3	22′ 30″·2	,, ,, 1209. ,,
49	1447	55m	56m	Kapteyn :—Already pointed out as probable in footnote in p.
51	1515	7m	6m	Stone.
53	7h 1567	14m	15m	Kapteyn.
,,	1577	59s·57	34s·57	Ristenpart.
55	1625	22m 32s·42	23m 2s·42	Kapteyn :—Same star as 1629.
56	1645	40°, 36′·9	39°, 35″·9	,, ,, ,, ,, 1644.
60	1782	44m	45m	,, ,, ,, ,, 1788.
63	1857	59s·36	49s·36	,, ,, ,, ,, 1854.
,,	1862	38′	39′	,, ,, ,, ,, 1863.
65	8h 1930	5m	6m	,, ,, ,, ,, 1938.
66	1958	41°, 6″·9	40°, 5″·8	,,
68	2029	21m 3s·53	20m 43s·53	,, Same star as 2027.
75	2224	46′	47′	Ristenpart :— ,, ,, ,, 2225.
76	2267	48°, 44″·3	47°, 43″·2	Kapteyn.
77	2292	48°, 14″·5	47°, 13″·4	,,
83	9h 2462a	a + 1m	= C.P.D. −58°, 1507	Ristenpart.
,,	,, δ	S.P.D. = 38°	= ,, ,, 1501	,,
84	2481	24s·68	44s·68	Kapteyn :—Same star as 2487.
,,	2484	11′	6′	,, ,, ,, ,, 2485.
85	2533	25m	24m	,, ,, ,, ,, 2524.
86	2548	27m	26m	,, ,, ,, ,, 2539.
88	2626	36m	35m	,, ,, ,, ,, 2611. (Also noticed by W. Mann).
90	2666	31s·93	23s·93?	,, ,, ,, ,, 2663. See also footnote in p.
95	2814	44′	39′	,, ,, ,, ,, 2815.
99	10h 2939	3s·87	13s·87	,, ,, ,, ,, 2943.
,,	2947	a belongs to 2946	δ to 2944	Ristenpart.
,,	2955	8s·70	38s·70	,, Same star as 2962.
102	3027	17°	16°	Kapteyn :—Same star as 3028.
103	3077	42°, 23″·3	43°, 24″·3	Ristenpart :—The identity assumed by S is erroneous.

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ERRATA VIII.—PARAMATTA CATALOGUE (BRISBANE) 1825 = p.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
104	10^h 3100	18′	20′	Kapteyn :—Same star as 3099.
,,	Footnotes (6)	and (7). Read :—	Brighter stars in the middle of a cluster of small ones very close together, about 6′	in diameter.
105	3126	$31^m\ 56^s{\cdot}10$	$32^m\ 6^s{\cdot}10$	Kapteyn :—Same star as 3128.
,,	3129	$6^s{\cdot}10$	$16^s{\cdot}10$	,, ,, ,, ,, 3134.
107	3174	36′	41′	,, ,, ,, ,, 3175.
108	3216	44′	39′	,, ,, ,, ,, 3215.
111	3304	...	...	,, There is a footnote in p : "Are not these the same star." All three seem to be in error in R.A.
,,	3306	...	...	
,,	3311	...	...	
114	3397	$57^s{\cdot}90$	$47^s{\cdot}90$	Kapteyn :—Same star as 3394. See footnote in p.
115	11^h 3411	$14^s{\cdot}90$	$44^s{\cdot}90$	,, ,, ,, ,, 3415.
117	3482	58′	53′	,, ,, ,, ,, 3481.
118	3512	30°	31°	,, ,, ,, ,, 3513.
,,	3526	11^m	12^m	,, ,, ,, ,, 3532.
119	3535	51′	46′	,, ,, ,, ,, 3534.
,,	3543	12^m	11^m	,, ,, ,, ,, 3530.
121	3621	37′	38′	,, ,, ,, ,, 3620.
122	3625	47′	52′	,,
,,	3642	19′	14′	,, Same star as 3643.
130	3867	35′	40′	,, ,, ,, ,, 3868.
,,	3889	32°, 53″·5	33°, 54″·7	,, ,, ,, ,, 3890. See also footnote in p.
131	3896	54^m	55^m	,, ,, ,, ,, 3904. ,, ,,
133	12^h 3956	30°, 32″·2	31°, 33″·5	,, ,, ,, ,, 3955.
134	4002	$44^s{\cdot}65$	$54^s{\cdot}65$	,, ,, ,, ,, 4004.
,,	4003	$45^s{\cdot}85$	$55^s{\cdot}85$	,, ,, ,, ,, 4005.
139	4152	$32^m\ 4^s{\cdot}62$	$31^m\ 54^s{\cdot}62$	,, ,, ,, ,, 4148.
141	4208a	Belongs to	4209	Ristenpart.
,,	,, δ	Is	G 17466	,,
142	4221a	$a - 2^m =$	4209	,,
,,	,, δ	Is	G 17466	,,
,,	4224	$a + 1^m =$	G 17507	,,
143	4252	$45^s{\cdot}01$	$35^s{\cdot}01$	,, Same star as 4249.
,,	4270	31°, 11″·9	30°, 10″·6	Kapteyn :— ,, ,, ,, 4269.
144	4292	31°, 6″·0	30°, 4″·7	,, ,, ,, ,, 4291.
,,	4293	$15^s{\cdot}84$	$5^s{\cdot}84$	,, ,, ,, ,, ,,
145	4328	$24^s{\cdot}53$	$54^s{\cdot}53$	,, ,, ,, ,, 4331.
,,	4333	52′	42′	,, Confirmed by S.
149	13^h 4440	56′	55′	,, Same star as 4439. See also footnote in p.
,,	4453	15^m	14^m	,, ,, ,, ,, 4445. See also footnote in p.
150	4477	$18^m\ 45^s{\cdot}75$	$17^m\ 5^s{\cdot}75$	,, Correction of $-100^{secs.}$ in R.A. assumed in S ; C.P.D. agrees with S.
151	4493	20^m	19^m	Kapteyn :—Same star as 4484.
152	4536	13′ 0″·3	23′ 0″·5	,, ,, ,, ,, 4537.
,,	4538	$25^m\ 8^s{\cdot}77$	$24^m\ 58^s{\cdot}77$	,, ,, ,, ,, ,, See also footnote in p.
,,	4543	30°	29°	,, ,, ,, ,, 4544.
154	4609	34^m	33^m	,, ,, ,, ,, 4604.
155	4631	41′ 28″·4	46′ 28″·5	Ristenpart :—a belongs to 4630, S.P.D. to 4629.
158	4711	53′	52′	Kapteyn :—Error of 1′. The star has considerable p.m. See p.m. stars.
159	4747	5′ 37″·9	10′ 38″·0	Kapteyn :—Same star as 4746.
,,	4753	54^m	55^m	,, ,, ,, ,, 4758.
160	4762	38°	37°	,, ,, ,, ,, 4763.
,,	4773	20′ 21″·3	15′ 21″·2	,, ,, ,, ,, 4774.
161	14^h 4801	35°, 9″·1	36°, 10″·2	,, ,, ,, ,, 4800. [7766].
,,	4806	$34^s{\cdot}38$	$14^s{\cdot}38$	,, This error is assumed in S. (see S.
,,	4813	3^m	2^m	Kapteyn :—Same star as 4806.
,,	4814	3^m	2^m	,, ,, ,, ,, 4804.
162	4846	$8^s{\cdot}63$	$58^s{\cdot}63$	,, ,, ,, ,, 4853, divergencies = $50^s{\cdot}1$, 11″·5

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ERRATA VIII.—PARAMATTA CATALOGUE (BRISBANE) 1825 = p.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
164	14^h 4907	15^m	14^m	Kapteyn :—Same star as 4898.
167	4988	44′	42′	,, ,, ,, ,, 4989. See also footnote in p.
168	5003	29^m	30^m	,, ,, ,, ,, 5009.
,,	5008	30^m	29^m	,, See also footnote in S.
,,	5017	44°, 54″·8	43°, 53″·7	,, Same star as 5016.
170	5075	44′ 34″·9	54′ 35″·1	,, Both = 5074; see also footnote in p.
,,	5076	48°, 41″·6	47°, 40″·6	
,,	5088	45° 2′	44° 52′	,, Same star as 5089.
171	5100	45°	44°	,, ,, ,, ,, 5101.
175	15^h 5228	47′	42′	,, ,, ,, ,, 5229.
177	5292	29^s·99	17^s·99	,, ,, ,, ,, 5289. Ristenpart.
178	5327	15^m	14^m	,, ,, ,, ,, 5316.
179	5353	18^m 53^s·72	19^m 13^s·72	,, ,, ,, ,, 5357.
182	5447	24^s·88	34^s·88	,, ,, ,, ,, 5449. See also footnote in p.
183	5469	...	...	Ristenpart:—Requires −5° in S.P.D. and is = 5472.
186	5567	37°, 13″·7	36°, 12″·6	Kapteyn :—Same star as 5566.
188	16^h 5615	58^m	59^m	,, ,, ,, ,, 5626.
,,	5622	15^h 59^m	16^h 1^m	,, ,, ,, ,, 5634.
189	5647	38′ 11″·5	33′ 11″·4	,, ,, ,, , 5646. See also footnote in p.
190	5665	5^m 31^s·09	6^m 1^s·09	,, ,, ,, ,, 5670.
196	5848	54°	53°	,, Equal to G. 22718.
198	5908	46^m 10^s·07	45^m 40^s·07	,, ,, ,, p. 5900.
,,	5916	19′ 27″·2	49′ 27″·7	,, G. confirms this correction.
,,	5919	28′ 38″·9	8′ 38″·5	,, ,, ,, ,, ,,
199	5935	...	...	Ristenpart:—Requires −9° in S.P.D.
200	5971	29^s·60	59^s·60	Kapteyn :—Same star as 5975. Ristenpart.
201	17^h 6013	22°	23°	,, ,, ,, ,, 6014.
,,	6019α	α + 10^s =	6022	Ristenpart.
,,	,, δ	Belongs to	6020α	,,
,,	6020α	,, ,,	6019δ	,,
,,	,, δ	,, ,,	6022	,,
202	6041	9^m	8^m	Kapteyn :—Same star as 6037. See p's footnote.
,,	6045	...	...	Ristenpart :— Requires −1° in S.P.D.
203	6053	26°	27°	Kapteyn :—Same star as 6054.
,,	6055	...	...	Ristenpart :—Requires +1° in S.P.D. and is = 6056.
,,	6061	...	...	,, ,, − 3° ,, ,,
,,	6065	...	...	,, ,, − 3° ,, ,,
,,	6066	...	...	,, ,, − 3° ,, ,,
,,	6068	...	...	,, ,, − 3° ,, ,,
,,	6071	55^s·24	25^s·24	Kapteyn :—Same star as G. 23594.
207	6176	...	...	Ristenpart :—Requires −1^m and is = C.G.A. 23970.
,,	6183	32^m	34^m	Kapteyn :—Same star as 6196.
209	6233	41^m	40^m	,, ,, ,, ,, 6227.
,,	6252	43^m	48^m	,, ,, ,, ,, 6277.
,,	6254	44^m	49^m	,, ,, ,, ,, 6280.
210	6283	49′ 23″·4	39′ 23″·2	Cape :—The reference p. might thus be added to the star in the C.P.D.
211	6314	56^m 45^s·66	57^m 5^s·66	Kapteyn :—Same star as 6317. See also footnote in p.
217	18^h 6480	34^m	35^m	,, ,, ,, ,, 6486.
219	6543	...	...	Kapteyn :—2′ error in S.P.D. and star = 6542.

This error seems strange both on account of the number of observations in p. (4 obs. in δ) and on account of the designation of this star and 6542 as ϵ_2 and ϵ_1 Coronae; there is, however, certainly but one star in the sky at present. On the other hand Taylor has both stars! Piazzi has only a single star. The case is somewhat the same with p. 4221 = t 5914, which is contained only in these two catalogues. (Or it may be that 6543 includes some observations which belong to 6556 which is double −6543 being registered double in p.—Innes). Ristenpart:—In revised Taylor, only one star; Innes's supposition probable. The case of 4221 is dealt with on p. 68c. and with t 5914, α belongs to 5913, δ to G 17466.

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ERRATA VIII.—PARAMATTA CATALOGUE (BRISBANE) 1825=p.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
219	18h 6553	49′	48′	Kapteyn :—Same star as 6555.
,,	6554	21° 47′ 25″·1	20° 52′ 23″·6	Ristenpart.
222	19h 6627	8m	9m	Kapteyn :—Same star as 6634.
223	6667	...	...	Ristenpart :—Requires −20° in S.P.D. and =6666.
,,	6677	20m	22m	Kapteyn :—Same star as 6688.
224	6693	No stars here.		Cape (1850 ±). Ristenpart :—Evidently errors of 30s and identical with 6696, 6700, 6703, and 6706. There are other unknown errors of precession and reduction, so that these stars must be excluded.
,,	6697			
,,	6698			
,,	6705			
225	6719	31m 11s·16	30m 41s·16	Kapteyn :—Same star as 6717. See also footnote in p.
226	6745	Note :—precedes this	has secs. of right ascension.	Cape :—The note as printed is wrong, the correction brings it more into accordance with the sky.
228	6827	22s·02	12s·02	Kapteyn :—Same star as 6826.
,,	6830	23′	24′	,, ,, ,, ,, 6829. See also footnote in p.
230	20h 6863	17m 52s·43	18m 22s·43	,, ,, ,, ,, 6865.
234	21h 6991	41°, 17″·6	40°, 16″·5	,, Confirmed by G.
,,	6995	49°, 36″·5	48°, 35″·5	,,
,,	6998	5m 42s·65	7m 2s·65	,, Same star as 7001.
236	7050	56′ 41″·6	46′ 41″·4	,, ,, ,, ,, 7049. See also footnote in p.
243	7265	6m 16s·22	7m 6s·22	,, ,, ,, ,, 7267.

Note:—No examination has been made of those positions of p. to which references are given in G. and S. Most of these are correct. The rest must have been corrected by Gould or Stone. (Kapteyn).
The corrections due to differential refraction have been supplied by Dr Ristenpart.

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ERRATA IX.—ARGELANDER'S SÜDLICHE ZONEN, VON E. WEISS (1850) = a.

Page.	Star.	For	Read.	Authority, Remarks, etc.
5	0^h 164	$19^s{\cdot}90$	$19^s{\cdot}86$	a.
8	301	...	...	Kapteyn :—a−C.P.D. = $-3^s{\cdot}8$. In C.P.D. 4 obs. P.M.? (Being reobserved with Cape T.C.).
12	447	mag. 8	9	a.
15	1^h 551	23′	22′	Kapteyn :—See footnote in a. Also queried by Schönfeld.
17	627	$29^s{\cdot}27$	$29^s{\cdot}24$	a.
26	1004	7′ 57″·7	6′ 57″·4	Ristenpart.
32	2^h 1219	27″·3	7″·3	,,
34	1268	22° 1′ 22″·8	21° 59′ 22″·5	Kapteyn :—Herschel and C. agree with C.P.D.
37	1417	12′ 4″·9	13′ 5″·3	,, l and G. agree with C.P.D.
42	1607	59′ 53″·2	58′ 52″·9	,, G. agrees with C.P.D.
60	4^h 2324	...	...	,, a −C.P.D. = +0′·5. Two obs. in a, dec. of C.P.D. certainly correct. The 2 obs. of a differed 10″. P.M. in dec. seems probable. Not in W.Z. (Being reobserved with Cape T.C.).
64	2480	13′ 2″·5	14′ 2″·6	Kapteyn :—Dec. of C.P.D. certainly correct.
65	2531	...	...	,, Both G. and C.P.D. confirm footnote in a, viz., dec. 50″ too far south.
68	2655	mag. 9	7	a.
73	2828	,, 8	9	,,
83	5^h 3247	50′ 24″·3	51′ 24″·5	Ristenpart.
85	3339	$28^s{\cdot}62$	$26^s{\cdot}42$	,,
102	6^h 3995(2)	mag. 8·9	8	a.
,,	3997(1)	,, 9	9·0	,,
,,	3998	,, 9·0	9	,,
,,	4000(1)	,, 8	8·9	,,
,,	4001	5′ 27″·5	7′ 27″·9	Ristenpart :—Printing error in Weiss, p. 534, for 9, read 8.
,,	4002	mag. 8	8·9	a.
,,	4003	,, 7·8	8·9	,,
104	4088	58″·0	48″·0	,,
,,	,,	4893	4893*	,,
106	4126	33″·3—4946	43″·3—4946*	,,
110	4294	2′ 8″·4	3′ 8″·8	
127	4850	27′ 51″·3	26′ 52″·1	Ristenpart.
129	4953	21′ 6″·8	22′ 7″·0	,,
135	7^h 5155	21° 59′ 57″·8	22° 1′ 58″·1	Kapteyn :—S.D. agrees with C.P.D.
,,	5169	49′ 0″·1	50′ c″·2	,, Dec. of C.P.D. certainly correct.
136	5202(2)	42″·1—6375	52″·1—6375*	a.
141	5366	57′ 19″·7	56′ 19″·6	Kapteyn :—a−C.P.D. = −0′·9. Hence a correction of 1′ seems probable. Th. confirms.
154	5860	2′ 6″·7	3′ 6″·9	Kapteyn :—a−C.P.D. = +0′·9. Hence a correction of 1′ seems probable.
158	5999	$36^s{\cdot}35$	$33^s{\cdot}35\pm$	Kapteyn :—This correction is indicated by the C.P.D. See also footnote in a and Porter Cinc. Publ. No. 9, p. 93.
161	6132	43′	45′	a.
163	6197	26′ 45″·4	24′ 44″·9	Kapteyn :—Dec. of C.P.D. certainly correct.
173	8^h 6550	$33^s{\cdot}98$	$32^s{\cdot}98$	a.
181	6811	8′ 51″·1	7′ 51″·0	Kapteyn :—Dec. of C.P.D. certainly correct.
191	7216	21′ 36″·4	[22′ 36″·6]	,, a−C.P.D. = +0′·8. Dec. of C.P.D. certainly correct. a−S.D. = +0′·5.

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ERRATA IX.—ARGELANDER'S SÜDLICHE ZONEN, VON E. WEISS (1850) = a.—*continued.*

Page.	Star.	For	Read.	Authority, Remarks, etc.
197	8^h 7432	18′ 16″·7	19′ 16″·9	Kapteyn :—Dec. of C.P.D. certainly correct.
199	9^h 7546	$54^s·64$	$53^s·81$	a. And delete asterisk.
201	7589	...	...	Kapteyn :—Dec. 1875. a $-19°33′·5$ } P.M.? S.D. $-19\ 33\ ·3$ } (Being reobserved C.P.D. $-19\ 32\ ·9$ } with Cape T.C.).
225	10^h 8526	15^m	14^m	Kapteyn :—As appears from the reference in S.D. Schönfeld had already detected this error.
236	9008(2)	mag.	9?	a. (Z. 375).
239	Footnote.	Siehe auch Anhang.	Seq.	,,
241	11^h 9198	21° 59′ 9″·2	22° 0′ 9″·3	Kapteyn :—S.D. agrees with C.P.D., but Th. confirms a.
254	12^h 9731	...	...	Kapteyn :—1875. a $=19°\ 19′·8$ } Dec. might be C.P.D. $=19°\ 19\ ·3$ } 19′·4 or 19′·5 but certainly not 19′·8.
262	10075	$2^s·10$	$2^s·04$	a.
273	13^h 10542	16′ 52″·6	17′ 52″·8	Kapteyn :—Dec. of C.P.D. certainly correct.
281	10853	45″	[48″ ±]	W.Z., G. and S. give about 48″.
296	14^h 11440	$43^s·37$	$33^s·18$	Ristenpart :—Read thread 3 for 2 in Z. 209. Same as 11435.
300	11578	$52^m\ 5^s·59$	$51^m\ 55^s·09$	
,,	,,	$26^s·74$—5″·5	$26^s·73$—5″·7	
338	16^h 12798	$42^s·89$	[$43^s·89$]	Kapteyn :—See footnote in a—also Z.C.
339	12832(1)	mag. 8·9	9	a. (Z. 211).
361	17^h 13496	$1^s·81$—21′ 46″·4	$1^s·68$—41′ 49″·8	Kapteyn :—In Oeltzen's 31′. Weiss has applied a correction of +10′ instead of −10′. In a's position no star in C.P.D and S.D.
403	18^h 14970	...	...	Kapteyn :—a − C.P.D. = + 0′·4. Ristenpart :—Is due to p.m. = $-0^s·02$, −0″·87.
423	19^h 15643	...	...	Kapteyn :—1850. W.Z. 2 obs. −30° 35′ 2″·5 a 1 ,, −30 35 10 ·5 C.P.D. −30 35 0 ·0 Error of 10″ in a?
429	15895	1′ 51″·8	0′ 50″·9	,, G. agrees with C.P.D.
481	23^h 17804	...	...	,, 1875. a $23^h\ 5^m\ 7^s·9$ Z.C. 9 ·0 G. 8 ·8 C.P.D. 8 ·7 P.M. or error of 1^s in a.
490	18137	57′ 57″·8	59′ 58″·4	,, See also footnote in a.

The Errata page 534 in a are reprinted above.
The changes due to differential refraction have been supplied by Dr Ristenpart.

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ERRATA IN TAYLOR'S MADRAS CATALOGUE, 1835.

Professor J. C. Kapteyn originally sent out a list of the errors which he had found in the first edition of Taylor's Catalogue, but since then Dr A. M. W. Downing's revised edition has been published.

The following discordances of Kapteyn's list only remain :—

Taylor 1076 and 1078. Kapteyn remarks that in Z.C., G. and S. there is but one star here which is not contained in *h*'s Catalogue of Double Stars. Downing's revision shews that Taylor has fallen into confusion over the two stars, there being but one observation of Taylor 1078 instead of 6 − 5 as given by Taylor. Curiously enough, there are actually two stars near the position of Taylor 1076 as shewn in the C.P.D. They were looked for visually on 27. 10. 1899, and seen mags. 7·9 and 8·6, the latter star being S. *pr*. On the Carte du Ciel plates Nos. 843, 844, 2297, 3907, 4439 and 4454 both stars appear, pos. angle 185° ± distance 27″±; t should therefore be deleted from C.P.D. −49° No. 388, R.A. $3^h\ 5^m\ 19^s\cdot0$ −49° 26′·5, and added to C.P.D. −49° 390.

Taylor 3166. This is No. 51 of Kapteyn's list of Missing Stars and it was not found here on 15. 4. 1896.

Downing identifies it with Bris. 1685, his revised position being but little changed from that of the first edition —to 1875=R.A. $7^h\ 34^m\ 20^s$ Dec.−26° 31′·1. This disagrees with Bris. 1685 by 72″ in declination, but in neither position is there any star in the C.P.D. nor in Thome's Cor. DM. It might be suggested that the R.A. of Taylor 3166 belongs to Taylor 3165 and the Dec. to Taylor 3156. [Ristenpart :—Yes!]

Taylor 5706. For 49′, read 59′.

Taylor 6059. Kapteyn points out that t−C.P.D. gives a discordance in R.A. In Downing's revision it is identified with Bris. 4355. The positions are :—

		1835.		
Brisbane	1824	$13^h\ 2^m\ 4^s\cdot2$	−58° 40′ 48″	(R.A. has been corrected by $+2^s\cdot5$).
Taylor	1839	9·1	41 48	
C.P.D.	1886	16·6	41 42	
Cape	1900	16·3	41 40·6	

but see also M.N.R.A.S, vol. lxi. p. 573 where the star is differently identified; the R.A. being decreased about 1^m. This makes Taylor's star identical with C.P.D.−58°, 4723 = p. 4344.

On the same page of the M.N. there is a list of other corrections to Dr Downing's revision, mostly communicated by Dr Ristenpart—those concerning stars south of −19° are :—

New No. 3609. Taylor's number for 3626, read { 3625. / 3626. }

„ No. 10179. Magnitude :—for 9 read 6. δ :—for 33″·22, read 31″·22.

See also Revision of C.P.D. forming part I of this volume.

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ERRATA XI.—SCHÖNFELD'S BONNER DURCHMUSTERUNG.
ZONES — 19° to — 23°

Page.	Star.	For	Read.	Authority, Remarks, etc.
			ZONE—19°	
371	270	38′·9	34′·5	A.N. 3189.
380	2960	...	A	Kapteyn.
,,	3019	A	...	,,
390	6001	32ˢ·0	34ˢ·4	Ristenpart:—First zone in A.N. 3189 excluded.
			ZONE—20°	
394	477	54′·2	58′·6	A.N. 3189.
400	2116	...	A	Kapteyn.
,,	2161	...	...	,, S.D. — C.P.D. = −3′·1. See also A.N. 3189. The existence of *two* different stars seems improbable, because both would most likely be contained in the C.P.D. which is very rich here.
402	2728	...	...	See A.N. 3189.
404	3343	...	...	Kapteyn:—The latter star is only contained in the C.P.D., but there seems to be certainly two stars here (see A.N. 3189); but there is no reason to suspect one of them of being variable.
,,	3344	...	...	
405	3648	39ᶠ·0	46ˢ·2	Kapteyn:—S.D. — C.P.D. = −7ˢ·5. The Bonn R.A. extremely uncertain (see A.N. 3189).
,,	3773	...	A	Kapteyn.
,,	3781	...	A	,,
409	4946	...	W.Z.	S.D. p. [56].
			ZONE—21°	
419	832	...	R	Ristenpart.
,,	894	...	A	Kapteyn.
,,	957	8·9	8·8	S.D. p. [56].
420	1169	...	A	Kapteyn.
431	4667	...	A	,,
			ZONE—22°	
451	3885	14ˢ·1	10ˢ·1	Kapteyn:—S.D. — C.P.D. = +3ˢ·6. R.A. of S.D. very uncertain (see A.N. 3189).
453	4398	...	A	Kapteyn.
454	4858	...	A	,,
457	5735	45ˢ·5	55ˢ·5	Ristenpart:—Because of a and C.P.D.

Further remarks:—In many cases reference to B is to be substituted for A, in some cases, also A for W.Z., etc., according to the rule laid down in the introduction p. 49. These cases have not been inserted in this list. (Kapteyn).

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ERRATA XII.—PORTER'S CINCINNATI ZONE CATALOGUE. = C.

No.	Authority :—Kapteyn.
140	In C's position, star neither in C.P.D. nor in S.D. It seems that by some mistake the star C 129 has been entered twice, viz., correctly as No. 129, and with an error of 4^m as No. 140.
1620	Add reference :—Bonn VI.
1628	" " " "
1771	" " Lal.
2319	We have for 1875 : a $13^h\ 7^m\ 15^s{\cdot}78_1$ $-21^\circ\ 41'\ 47''{\cdot}7_1$ 1850·4. C $16\cdot94_3$ $53\ '4_3$ 1885·7. C.P.D. $15\cdot8_4$ $54\ _4$ 1888·6. Radcliffe $16\cdot65_3$ $53\ '3_3$ 1892·3. Cinc. No. 14 $16\cdot69_3$ $52\ '7_3$ 1894·4.
3788	R.A. to be increased by 4^m. In C's position missing both in C.P.D. and S.D. a agrees with C.P.D.

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ERRATA XIII.—1ST WASHINGTON CATALOGUE, YARNALL'S 3RD EDITION BY FRISBY. = W.

(From — 19° Southwards.)

No.	For	Read.	Authority, Remarks, etc.
497	40^m	49^m	Kapteyn :— Printing error.
812	$3^s.840$	$2^s.840$	,,
825	$3^s.708$	$2^s.708$	,,
1096	δ is 7″	too small.	Ristenpart.
1250	2^s 670	$2^s.655$	,, Change due to correction in Dec.
,,	5′	55′	,, Proved by identification with Lac. 865.
1287	...	...	,, A.C. Leipzig II. —W = +0s.36. A.N. 131, 113.
1683	...	...	Ristenpart :—A.C. Leipzig II. —W = —5″. Weisse's Bessel confirms A.C.
1753	47″.0	6″.0	A.N. 132, 111.
3316	+9″.40	—9″.40	,,
3320	1′	2′	,, G confirms the C.P.D.
3500α	Is G 11390	23^m $7^s.89$, 65.1	Ristenpart.
,, δ	Belongs to 3510	11″.73	,, δ corrected by —1rev.
3510	3500 δ included	33″.3, 70.8$_4$, 11″.80	,,
4285	6′	7′	A.N. 147, 375.
4954	27′	17′	Kapteyn :—Z.C. confirms the C.P.D.
5003	35^m	36^m	,, Printing error.
5879	26′	25′	,, t and G. confirms the C.P.D.
6097	26°	23°	,, Printing error.
6481	$2^s.515$	$3^s.515$	,, ,,
6482	Is8·om. 15^h23^m $1^s.62$	71.5$_3$, $3^s.723$	Ristenpart :—Originals consulted.
6483	,, ,, $15^h22^m58^s$ ±	... $3^s.885$	,, ,, ,,
7148	2″.08	6″.08	
7296	$3^s.856$	$3^s.656$	Kapteyn.
7448	Lac. 7351	Lac. 7357	,,
,,	36°, 56″.1	37°, 54″.3	Ristenpart :—Computed from original.
7483	$3^s.145$	$4^s.145$	Kapteyn.
7991	34′	24′	,, Printing error.
8567	40° 3′ 11″.9	40° 3′ ±	Ristenpart :—δ not observed, is C.P.D. —40° 9047.
8578A	α = $19^h28^m35^s$ ±, δ—	40° 3′ { 6″.1 / 16.7 } { 69.7$_2$ / 7″.56 }	,, δ discordant, the first bad. = C.P.D. — 40° 9054.
9248	70.2$_7$	69.3$_8$	Ristenpart :—δ of 9265 included.
9265	40′ 7″.5, 62.8$_1$	35′.6 ±...	,, δ belongs to 9248 = C.P.D. —35° 8915.
9401	$18^s.94$	$20^s.36$	Kapteyn :—W. to Ristenpart.
9949	30°	20°	,, Proved by identity with Ö.A. 21896 as well as by prec. in R.A. Printing error.

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ERRATA XIV.—BONN MERIDIAN OBSERVATIONS = b.
BONN BEOB. VOL. VI. 1867.

Star.		For	Read.	Authority, Remarks, etc.
2^h	68	35^m	34^m	Bonn Obs., vol. vii.
	88	$57^s{\cdot}81$	$51^s{\cdot}77$	Deichmüller to Ristenpart.
	102	55′ 59″·4	56′ 59″·6	Note to the Tacchini-Hagen Catalogue.
5^h	11	25′ 42″·0	24′ 41″·3	Deichmüller to Ristenpart.
	76	20°	19°	,, ,, ,,
	116	40^m	49^m	Kapteyn :—Evidently printer's error.
6^h	15	54′	53′	,, G., S., and W.Z. agree with C.P.D.
	34	45′ 29″·1	44′ 28″·5	Deichmüller to Ristenpart.
	40	59′ 15″·9	57′ 11″·1	,, ,, ,,
	57	5′ 12″·2	6′ 12″·4	,, ,, ,,
	114	24′ 12″·9	22′ 9″·7	,, ,, ,,
8^h	23	8^m	9^m	Kapteyn :—In S.D. the star is referred to in the corrected position. Confirmed by Deichmüller.
9^h	121	12′	13′	Kapteyn :—G., S. and c agree with C.P.D.
12^h	95	21°	20°	,, In S.D. the star is referred to in the corrected position. Deichmüller :—Printer's error.
16^h	107	$13^s{\cdot}33$, 29°, 56″·2	$13^s{\cdot}20$, 30°, 56″·1	Bonn Obs., vol. vii.
20^h	49	31° 0′ 53″·8	30° 58′ 52″·4	Deichmüller to Ristenpart.
23^h	67	11′	12′	Kapteyn :—G. and W.Z. agree with C.P.D.

See also the Errata on page 381 Bonn Beob., vol. vi.

Dr Ristenpart informs us that he sent a large list of errata to Herr Deichmüller, who kindly consulted the originals and computed the exact amount of the corrections.

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ERRATA XV.—KAM'S CATALOGUE FROM A.N. VOLS. 1-66. = k.

Star.	For	Read.	Authority, Remarks, etc.
417	$44^{s}\cdot32$	$34^{s}\cdot32$	Kapteyn:—See also A.N. 123, 237.
569	$12''\cdot5$	$42''\cdot5$	,, l and a agree with the C.P.D. See also p. 154 in k.
2893	...	...	Kapteyn:—k−C.P.D. = $\alpha + 3^{s} \pm \delta - 0'\cdot3$. t agrees with C.P.D.
3515	$0'$	$5'$	Kapteyn:—See also A.N. 123, 235.
4344	37^{m}	36^{m}	,, Z.C. agrees with C.P.D.
4473	...	...	,, ,, G. and S. agree with the C.P.D. that k's dec. requires about $+0'\cdot4$ correction.
4520	$16'$	$17'$	Kapteyn:—G. and S. agree with the C.P.D.

ERRATA XVI.—KAM'S CATALOGUE FROM A.N. VOLS. 67-112. = K.

Position in K. 1875.		Identified in C.P.D. with		Authority, Remarks, etc.
h m s	° ′	h m s	° ′	
17 49 *51*	− 19 2·0	17 49 *45·8*	− 19 1·9	Kapteyn:—S.D. agrees with C.P.D.
18 1 54	− 21 *31·9*	18 1 53·7	− 21 *31·5*	,, K−C.P.D. = $+0'\cdot4$.
19 59 42	− 19 *7·8*	19 59 41·8	− 19 *8·8*	,, S.D. has $\delta = 9'\cdot0$.

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ERRATA XVII.—CAPE CATALOGUE FOR 1850 = c.

(The list of errata published with this Catalogue are not repeated here as a copy of the list is inserted in each copy of the Catalogue).

Star.	For	Read.	Authority, Remarks, etc.
416	32″·54. 3″·53	30″·47, 1″·46	
571	Piazzi III, 182	Piazzi III, 183	Ristenpart.
571 Note	follows	precedes	
989	$42^s·92$, $-0^s·12$	$42^s·49$, $+0^s·31$	
1633	$4^s·39$, $0^s·47$	$4^s·36$, $0^s·44$	
1828	B.A.C. ...	B.A.C. 3461	
2931	$+3^s·367$	$+3^s·667$	Kapteyn.
4707	$+4^s·434$	$+3^s·434$	,,

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ERRATA XVIII.—RÜMKER'S PRELIMINARY CATALOGUE OF SOUTHERN STARS = r.

Star.	For.	Read.	Authority, Remarks, etc.
14	4° 15′	5° 30′	Cape.
,,	44″·171	43″·687	,,
,,	19″·955	19″·965	
18	64° 19′	63° 59′	Kapteyn:—The reference to β_3 Toucani makes this correction certain.
28	42″·240	33″·7±	Kapteyn.
32	...	...	,, r−C.P.D. = +0′·5 in δ.
44	45″·51	40″·51	,,
56	...	...	,, r requires + 30$^{secs.}$ in α. S. assumes this correction.
63	...	...	Kapteyn:—r−C.P.D. = −0′·6 in δ. c and G agree with C.P.D.
71	...		Kapteyn:—r−C.P.D. = −2′·8 in δ. t agrees with C.P.D.
72	51°	61°	,, S. also assumes this correction.
80	64°	62°	,, Correction proved by name of star (α Hydri).
90	33°	34°	,, ,, ,, ,, ,, (α Columbæ).
96	7″·146	−7″·146	,,
98	...	...	,, r−C.P.D. = −0′·5 in δ. g and G. indicate an error of 25″ in r.
99	25″·880	22″·99±	Kapteyn.
159	15″·643	18″·4±	,,
194	...	...	,, Both α and δ slightly in error, as proved by a comparison with Taylor.
221	35″·170	10″·5±	Kapteyn.
222	35″·562	10″·5±	,,
229	5′	6′	,, (and Cape 1840).
257	42″·748	44″·58±	,,
277	44″·784	47″·0±	,,
321	50°	51°	Cape 1840.
333	...	...	Kapteyn:—r−C.P.D. = +0′·5 in δ. g and G. indicate an error of 20″ in r.
364	77°	75°	Kapteyn:—(and Cape 1840).
388	...	...	,, I have assumed that the α's of 389 and 390 must be interchanged; 390 then becomes identical with 388. See also remark in footnote in S.
389	...	...	
390	...	...	Note:—There are two stars here, the difference between them being α+11^{s}·5, δ+10′·6. Long ago at the Cape it was assumed 389 and 390 were identical, 390 requiring a correction of +10′ in δ.
392	23′	8′	Kapteyn:—t also indicates a correction of −1^{m} in α.
406	224° 1′	223° 46′	,, G. ,, ,, ,, ,, ,, −1^{m} ,, ,,
408	64″·209	84″·209	,,
415	...	...	,, r−C.P.D. = +1′·7 in δ. t confirms C.P.D. It is possible, however, that r's α is also in error and the star identical with 416. On account of the difference of mag. our first assumption seems the more probable one.
432	...	...	Kapteyn:—r−C.P.D. = +5′·4 in δ. Error proved by name of star (κ_2 Apodis).
448	51′	50′	Cape 1840.
451	...	...	Kapteyn:—r−C.P.D. = +0′·5 in δ. Cape 1860 agrees with C.P.D.
460	64″·695	77″·7±	Kapteyn.
466	65″·912	82″·2±	,, See Missing Stars, No. 749, vol. iii. p. 64.
471	63″·755	94″±	Cape.

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ERRATA XVIII.—RÜMKER'S PRELIMINARY CATALOGUE OF SOUTHERN STARS = r.

Star.	For	Read.	Authority, Remarks, etc.
474	79″·150	125″±	Kapteyn.
477	66″·045	92″±	,,
481	72″·712	83″·0±	,,
494	57°	56°	,, c agrees with C.P.D. For reference in C.P.D. see Errata.
497	87″·845	83″·3	Kapteyn.
505	57″·535	76″·5	,,
526	14′	44′	,, S. in footnote also thinks a correction of 2^m probable. The corrected pos. agrees with G.
531	50°	51°	Kapteyn :—S. also assumes this correction.
550	59°	57°	,, r has computed the prec. with the corrected dec. For reference in C.P.D. see Errata.
592	...	...	Kapteyn :—A correction of $+5^m$ in α makes r agree with C.P.D. and G.
595	...	...	Kapteyn :—r − C.P.D. = +0′·4 in δ. c confirms the C.P.D.
614	...	...	,, Considerable P.M. in dec. (see S.) "r's α 3′ too small" (footnote in S.).

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NOTES AND ERRATA.

MADRAS 1875 CATALOGUE.

(In addition to the list of errata inserted in the Madras Catalogue at p. xxviii.).
See also list on p. 60A. *ante*.

Star No.

33 R.A. requires $+1^m$ and star = C.Z. 0^h 270.

700 When dec. of C. G. A. is corrected by 1′, we have M − C. G. A. = 1″·2.

1285 Ristenpart:—Is Cor. DM. −31° 2970.

1568 Footnote. For 18′·8, read 19′·6.

2463 Marked "Anonymous." Is C.P.D. − 57° 3939 = C. G. A., No. 18 (*x* Carinæ Cluster).

2602 Footnote. C.P.D. confirms Madras position. C.Z. in error.

2697 "Anonymous." Is C.Z. 11^h No. 3512. That it is not anonymous is shewn by the column:—Madras—C. G. A.

3212 Madras 75, W.Z. and C.P.D. indicate a correction of − 10″ to the C.Z.

4545 W.Z. gives M − W.Z. = $+0^s{\cdot}42$ in α. The observations are, 1875:—

W.Z.	2 obs.	1848·2	$20^h\ 27^m$	$1^s{\cdot}58$	−31° 20′ 30″·6.
Madras	2 „	1867·0		2 ·02	29 ·1.
„	2 „	1872·6		2 ·19	29 ·9.
C.P.D.		1888·9		3 ·1	18

This indicates a proper motion of α $+0{\cdot}025^{secs.}$, or on a great circle 0″·321 towards 90°.

4690 Note. "Apparently large P.M." The proper motion of this star is small, perhaps the note belongs to another star.

4753 Note. "Probably large P.M." Confirmed here. The proper motion is α − $0^s{\cdot}064$, δ − 0″·08.

5259 For 47^m, to read 48^m. Would then be same star as C.Z. 23^h 1321. In original position, not in C.P.D.

5303 Note. "Apparently has large P.M." The p.m. in α is $+0{\cdot}050^{secs.}$, in δ nil.

ERRATA IN THE CAPE PHOTOGRAPHIC DURCHMUSTERUNG.

(In addition to those already published in the C.P.D. volumes).

Vol. I. p. 383 No. 2170. Add 9·0 in ref. col.
„ 422 „ 4492. For 8·0 G =, read 8·0 G W =.

Vol. II. p. xii. No. 277. Delete 9·3 in col. 7.
„ 90 „ 2521. Delete G.

Vol. III. p. 11. Introduction. Nos. [325], [527], [648], [818]. Delete.
„ 55 „ No. 376. Insert 2 (hours) in α column.
„ 57 „ „ 470. For 23′, read 32′.
„ 63 „ „ 704. „ 451, „ 453.
„ 67 „ „ 866. „ −75°; „ −74°.
„ 68 „ „ 929. „ −85°, „ −83°.
„ 69 „ „ 955. „ "precision," read "precession."
„ 81 „ List III *bis*, Add,
No. 0. $8{\cdot}8^m\ 3^h\ 44^m\ 28^s$ − 41° 1′·6. Looked up on 3 Carte du Ciel plates. Not variable (R.T.A.I.).

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ERRATA IN THE CAPE PHOTOGRAPHIC DURCHMUSTERUNG.—*continued.*

Vol. III. p. 177 −57° No. 12. Delete. On *m* was a speck which was removed, on *c* a star-like image. To be struck out as it only occurs on a single plate. See also No. 1, p. 7B. *ante.*
„ 222 −58° 192. Insert S in some copies.
„ 373 −62° 5421−2. Lower S from 5421 to 5422.
„ 462 −67° 2712. For 19·0, read 10·0.
„ 487 Star $8^h\ 5^m\ 31^s{\cdot}0$. For 77, read 7·7.
„ 503 −70° 976 −7. Raise *g* from 977 to 976. −70° 999 − 1000:—Lower *g* from 999 to 1000.
„ „ Precession column. For $10^h\ 2^m$, read $10^h\ 20^m$.
„ 544 −72° 2452. For reference S, read **S**.
„ 585 −76° 396. $6^h\ 33^m\ 26^s$. Delete: signifying double star (printing error).
„ 613 −79° 430. α to be corrected by $-3^s{\cdot}8$.
„ 631 −82° 31. α „ „ „ $+10^s$.
„ 668 −89° 34. Add, Cape 91 in ref. col.

MISCELLANEOUS ERRATA IN CAPE PUBLICATIONS.

Cape Meridian Observations:—

1871 p. 42 ξ Octantis. $b = 9{\cdot}7155$, $c = -0{\cdot}8637$, $a_1 = -9{\cdot}8414$, $d_1 = +9{\cdot}8193$.
1876 „ 321 Note. For 2006, read 2005.
1888–89 „ 105 For St. 5987, read St. 5689.
„ 167 No. 772. For ε Corvi, read ε Corvi ⊙.
1890–91 „ 206 col. 2. 46. Leo. Min. For 55° 11′ 51″·66, read 55° 11′ 50″·66
„ 216 „ „ 31. Cor. Bor. Is Comæ Beren. (Also on p. 291 No. 869.)
„ 229 „ 3. Delete the obs of July 16. Means:—For $35^s{\cdot}82$, read $35^s{\cdot}81$. For 53″·19, read 53″·21.
„ 249 For o_1 Cygni, read o_2 Cygni. (Also on p. 305.)
„ 288 No. 726. Mean Dec. for 8″·34, read 9″·34.
„ 297 „ 1091. R.A. No. of obs. for 8, read 7. Mean, for $35^s{\cdot}82$, read $35^s{\cdot}81$.
Dec. „ „ 9 „ 8. „ „ 6″·81 „ 6″·79.

Cape Catalogues:—

1840 No. 1884. Lac. 5985 omitted.
1885 No. 290. Cols. 13 and 21. Corr. for μ computed for 1 year too much. (V.J.S. 1896 p. 32.)

Cape Annals:—

Vol. I. p. (2). 3rd last line. For 1881, read 1888.
„ „ „ (37). Several places. „ C.G.A., read A.G.C.
Vol. VI. „ 459 line 27. For λ − 0″·131, read 0″·013.
Vol. VII. „ 440. Star g. For 21° 29′, read 21° 27′.
„ „ „ 467. „ „ „ 21° 29′, read 21° 27′.
Vol. VIII. Part II. „ v. 7th line from bottom. For VI., read VII.
„ „ „ „ 13B. 3rd „ „ „ „ α, „ β.
„ „ „ „ 92B. For ε = S.D. − 17°301 (8·0), read S.D. − 17°300 (8·0).
Vol. IX. „ I. „ 17A. No. 417. Ristenpart:—Correcting δ by +30′, the star becomes identical with C.P.D. −86°, 32.
„ „ „ „ 24A. „ 604. Delete "proximates" and add at end:—Cordoba to Ristenpart:—No error found in Z.C.
„ „ „ „ 28A. „ 700. Is C.P.D. −78°, 848 $b = 9{\cdot}7^m$. [R.]
„ „ „ „ 30A. „ 761. For 54″·3, read 54″·3.
„ „ „ „ 35A. „ 926. The mags. of *g* 15137 and 15142 are to be interchanged.
„ „ „ „ „ „ 933. W. writes that by changing α by −1 wire interval and δ by $2^{revs.}$ they get the Cape star viz.:—for 1850:—*g* 15474 $\alpha = 21^h\ 45^m\ 6^s{\cdot}80$, δ −67° 32′ 11″·0. [R.]
„ „ „ „ 62A. No. 414. δ should be struck out, as micr. reading is not recorded. [R.]
„ „ „ „ „ „ 501. Only a try. Delete. [R.]
„ „ „ „ „ „ 646. Delete. The δ is secured within a few mins. by the wire intervals. The star should be looked for again on the parallel, before and behind the printed α. [R.]
„ „ „ „ „ „ 653. Delete. No easy suggestion can be found, star perhaps variable. [R.]
„ „ „ „ „ „ 689. For "δ by −3″·33," read. "α by $-3^s{\cdot}33$." [R.]

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CAPE PHOTOGRAPHIC DURCHMUSTERUNG.

ADDITIONAL REFERENCES. (Mainly from Kapteyn).

After correction of Gilliss's Southern Circumpolar Catalogue, the following stars in the C.P.D. get a *g*:—

−62° Nos. 1046, 1052, 1065.
−63° „ 632, 764, 1027, 1112, 1767, 1991.
−64° „ 612.
−65° „ 3820.
−66° „ 2575, 3162, 3677.
−67° „ 366, 1429, 2370.
−68° „ 23, 55, 573, 2264, 2642, 3193.
−71° „ 32, 34, 101, 615, 1217, 2772.
−72° „ 725, 1893.
−74° „ 887.
−75° „ 79, 542, 831, 1790.
−76° „ 1343.
−79° „ 85, 99, 165, 1214.
−80° „ 230, 500.
−81° „ 252, 339, also a g to latter.
−82° „ 44.
−84° „ 360.
−85° „ 52.
−86° „ 37.

−20°	No. 5585.	Add.	l	See No. 92, p. 61A. *ante.*
−21°	„ 2663.	„	„	„ „ 52, „ „ „
−29°	„ 2640.	„	W	After correction of W.
−35°	„ 8915.	„	„	
−76°	„ 613.	„	k	

REFERENCES TO THE 1880 SYDNEY CATALOGUE (STICHTENOTH).

(Published 1902.)

The following stars, which in the C.P.D. are without any references to Catalogues of precision, will be found in the Catalogue which Dr Stichtenoth of Berlin has made from the Sydney observations from 1877 to 1881.

−28° No. 6913.	−44° No. 8285.	−57° No. 8305, 8647.	−66° No. 2146.
−31° „ 2748.	−45° „ 6469.	−58° „ 2443, 3496.	−68° „ 373, 2108.
−32° „ 3117, 6272.	−47° „ 7047.	−59° „ 397.	−69° „ 1972.
−33° „ 2549, 2552.	−55° „ 6138.	−62° „ 5552.	−70° „ 1742.
−41° „ 9553.	−56° „ 1730.	−65° „ 3366.	−71° „ 1713.

(Ristenpart.)

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INDEX TO PUBLISHED LISTS OF ERRATA IN SOUTHERN STAR CATALOGUES.

Cape 1840 Catalogue:—See Cape 1880 Catalogue, p. 258 note and p. 556 *et seq.*
„ 1850 „ „ 1850 „ p. i.
„ 1880 „ „ 1880 „ p. 556 *et seq.*

also a leaf of errata pasted into many copies of the Catalogue.
Nature 1883 March, p. 498.
Ast. Nachr. Nos. 2661, 2668, 2787 and 2809.
Ast. Journ. No. 174.
C.P.D. Vol. III. p. 70.

Cape Photographic Durchmusterung:—

Vol. I. See C.P.D. Vol. I. pp. i–ii.
„ „ II. p. xxxi.
„ „ III. pp. 85–6 and 88.
Vol. II. „ „ „ „ 86–7.
Vol. III. „ „ „ „ 87–8.

Uranometria Argentina (Cordoba).

See U.A. last fly leaf.
V.J.S. 1880 p. 272.
Ast. Nachr. Nos. 2377 and 2784.
Ast. Journ. „ 215 and 278.

Cordoba Zone Catalogues.

See Ast. Nachr. Nos. 2659, 2688, 2784, 3227, 3256, 3281, 3539, 3679 and 3681.
Ast. Journ. Nos. 342 and 364.
Cor. DM. Vol. III. pp. xliv.–lii.
Cordoba Photographs.
Gilliss's Pol. Cat., footnotes.
„ „ (Precession Appendix) Ast. Journ. No. 344.

Cordoba General Catalogue.

See Ast. Nachr. Nos. 3227, 3427 and 3539.
Ast. Journ. „ 364.
Cor. DM. Vol. III., pp. lii.–liv. and pp. 11–12 at end of that volume.
Cordoba Photographs.
Gilliss's Pol. Cat. footnotes.

Cordoba Durchmusterung.

See Ast. Journ. Nos. 360 and 364.
Cor. DM. Vol. III. pp. liv.–lvi. and p. xliii.

(The lists in the Cor. DM. Vol. III. [Cor. Res., Vol. XVIII.], are supposed to supersede those published in earlier volumes of the Cordoba Results such as Vols. XV., p. 336, and XVII. pp. 540–1).

Lacaille's Catalogue (British Association).

See page 299 of the Catalogue.
Ast. Nachr. No. 2498.
Bonn Observations, Vol. VII. p. 245.
Nature 1883, March p. 498.
Ast. Journ. See Gould's papers under next entry, also Nos. 25, 27, 28, 32 and 133.
Mems. R.A.S. Vols. XX. p. 46 and XXI., p. 121.

Lacaille's Coelum Australe Stelliferum.

See Bonn Observations, Vol. VII. p. 240.
Ast. Journ, Nos. 211, 214, 217 and 219.

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INDEX TO PUBLISHED LISTS OF ERRATA IN SOUTHERN STAR CATALOGUES.—*continued.*

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See also:—

Corrigenda in Various Star Catalogues by C. H. F. Peters, (American) National Academy of Sciences, Vol. III pp. 87–97.

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The position of ω Centauri as given in Dreyer's Catalogue of Nebulæ (Mems. R.A.S., vol. 49, Part I. No. 5139) requires a correction of −10′ in S. Dec.

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